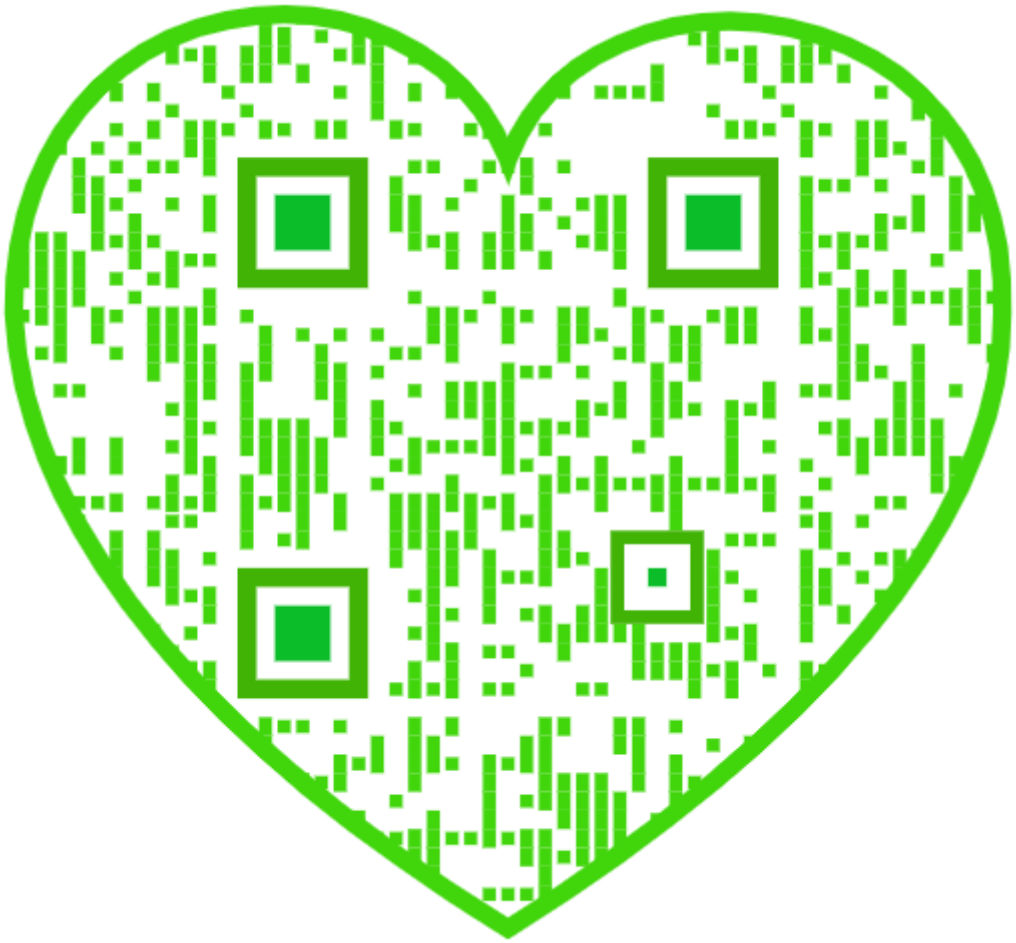

NOTES

ON

NORTH AMERICA

"In fro what partie of the earth that men dwell, outher aboben or benethen, it seemeth always to hem that dwellin there that they gow more right than any other folk."

SIR JOHN MANDEVILLE.

NOTES

ON

NORTH AMERICA

AGRICULTURAL, ECONOMICAL, AND SOCIAL

BY

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October 12.—This morning I started early for Bathurst, a distance of fifty-two miles along the coast of the Bay de Chaleur. The country over which we passed consisted of the highly-inclined upper Silurian beds, with occasional limestones occurring among them, especially about half-way to Bathurst. Over these rocks, in many places, were spread, in patches more or less extensive, horizontal old red-sandstone beds, and, for the first twenty-five miles, red drift covered the surface, forming a light red land, easily worked, in many places cleared, and covered with thriving farms.

I had, during the forenoon, an opportunity, which rarely occurred, of comparing together the opposing sentiments of different persons in regard to this country as a place for the settlement of our home population.

Nineteen miles from Dalhousie, we stopped to refresh ourselves and rest our horses. The settlers thus far are mostly from Arran; and here I met with a Free Church minister from the same island, who had been in the province for a couple of years, and occasionally preached in Gaelic. Most of the Scotch settlers, he informed me, had joined the Free Church. They had already one church twelve or fifteen miles on this side of Dalhousie, and are about to build another in the town itself, where there is already one belonging to the Scottish Establishment. He was the only person I had hitherto met with who, though he did not speak distinctly out, showed, by his manner and conversation, that he was dissatisfied with the country—perhaps it might be with his situation in it. He acknowledged that the climate was very healthy, and that all the settlers were prospering, but that he would not encourage any persons to come out and settle here. His chief grievances were, that the winter was very cold, and that the farmers could get no money for their grain and other produce from the merchants.

It is possible that the peculiarities of his situation, or his recent arrival in the country, may make this gentleman think more of these two difficulties than they deserve. His profession may expose him more to the cold in winter, or he may feel it more, from being already beyond the middle of life when he arrived, and having less of the bodily exercise which the farmer is obliged to take. And as he has to depend on his farming friends, I suppose, mainly for his support, he may suffer more than others from the system of barter, which is almost a necessity in a new country like this, and must, for a long time, be the chief mode of conducting business between the cultivator and the importer. The farmer gives his grain to the country-merchant, and gets tea, sugar, cloth, and leather in return. The latter

sends the same grain to the town-merchant in St John or Quebec, and, like the smaller dealer, obtains also in return the same or other West Indian and manufactured articles. It is only after a country has become so rich or so densely peopled that several merchants can obtain a living in the same neighbourhood, and, by doing much business, can afford to take smaller profits and to outbid each other, that money is easily obtained, and is diffused readily among the community. Such a period will arrive, without doubt, in this and most other parts of these northern provinces; but that it has not yet arrived in any special locality, is not to be considered as a peculiar drawback to that locality, or as a grievance which will not disappear from all new settlements as age creeps upon them, and their population and products increase.

Twelve miles further on we stopped at Chalmers's, (Belledune.) Two brothers live at this way-side inn and farm, and the settlers around are chiefly from Ayrshire. These brothers had been eighteen years in the country, and they differed altogether from the minister as to the evils of the New Brunswick winter. That it was cold, they did not deny; but it was dry, they said, and bracing, and more easily borne than a winter at home, "because a man never gets his feet wet, and, except when the winter is melting off into spring, is seldom exposed to damp weather, or to the danger of taking cold." They agreed also—and many others have told me the same—*that if a man is comfortable at home, he ought not to come out here;* but that if he does come out, and is inclined to work with perseverance, he will surely prosper. The difficulties of the settler are chiefly experienced during the first two years, after which they are gradually got over, and he becomes first reconciled, and finally attached to the country in which he is prosperous and independent.

In this north-eastern part of New Brunswick, there

are many French settlers, the descendants of the old Acadians. In the latter half of this day's journey we passed many of their farms, and a few villages inhabited by them.

At one of these—Petit Rocher, or Little Rock Point—we stopped a few minutes and visited a farm by the road-side, which a Mr Woolmer, a person engaged in the fishing trade, had begun to cultivate on an improved method. Some of the French ploughmen here were turning over straight deep furrows, and making very good work. With the aid of lime and fish-refuse, the owner of this farm promises not only to raise good crops, but to exercise a beneficial influence over the neighbouring proprietors.

In parts of the country which, like the neighbourhood of Petit Rocher, are still somewhat remote, the French are collected in the greatest numbers, and are most unmixed. In such localities they possess soils of different qualities—as they occur naturally intermingled over the surface they inhabit. But as we approach the centres of commerce, or the points towards which emigration tends, the population begins to be mixed, and the inferior land only is in the hands of the native Acadians.

This began to be the case as we came within eight or ten miles of Bathurst. Immediately north of the Tatagouche River, we passed through much swampy land, and much poor, hungry, gravelly soil, intermixed with occasional patches, more or less extensive, of deep red loam. In this region, the poorest, most stony, least capable, and worst-cultivated land is in the hands of the French—the best land, and the best cultivated, being possessed by those of British descent. I have already mentioned that, in the neighbourhood of the brothers Chalmers, at Belledune, the present settlers are chiefly Ayrshire men. The French formerly occupied exten-

sively all along this coast; but these Ayrshire emigrants appear to be shrewd enough to buy out Johnny Crapaud, when he happens to possess good or easily available and improvable land. And the thoughtlessness and improvidence of the French give them too many opportunities of doing so. But the inner country, for a considerable distance along this coast, is excellent land. This is said to be fast filling up, and the back concessions are chiefly occupied by the retiring French, who fall back as the intruding Saxons advance.

With all this, however, the French are the most cheerful people the traveller meets in this country, apparently the most happy, and certainly the most contented with their crops. This contentment with things as they are is not so beneficial to the commonwealth, and is certainly the cause of their being themselves supplanted and pushed back into the wilderness. But one cannot mix with these people without feeling that this easy contentment may possibly be more productive of positive worldly happiness to them, as individuals, than the restless, discontented, striving, burning energy of their Saxon neighbours.

We reached Bathurst about six in the evening, having come through with the same horses—and found a clean inn and comfortable quarters awaiting us.

Oct. 13.—The town of Bathurst is situated on either side of a harbour, or bay, some six or eight miles in depth, and four or five wide, which is formed by the mouths of three rivers — the Tatagouche, the Middle, and the Nepisiguit—which fall into it. It is well built, and has quite the air of a town, though its population has never exceeded a thousand. At present, in consequence of the failure of Mr Cunard's large shipbuilding establishment, it contains only about five hundred inhabitants. The harbour at the town itself is about half a mile wide, and is crossed by a wooden bridge of that

length. The construction and maintaining of such a bridge, even in an old country, would be considered as a serious undertaking; but it is only one of numerous similar works which have been executed in this province, for the purpose of improving and facilitating the internal communications of the country. On the high ground above the north end of the bridge stands a large Roman Catholic church, and, at a little distance, one belonging to the Church of Scotland—both conspicuous objects. On the south side of the harbour is an Episcopal church, smaller, and of less pretensions. The larger churches, and especially the very large Roman Catholic one, are intended for the accommodation of a larger rural, as well as for the smaller town population.

Among the persons from whom strangers in Bathurst are accustomed to receive attention, Mr Francis Ferguson is one of the most conspicuous; and I have to confess my obligations to him for much hospitality and kindness. He owns a farm of 500 acres, close to the town—of which 130 acres are in cultivation, all well fenced, clean, in good culture, and under crop, besides 10 or 12 acres in pasture. This farm presents an illustration of what I have said, as to the gradual extrusion of the Acadian French. Eight years ago it formed three French farms, on each of which only a little bit was cleared round the site of the settlers' house. These farms he bought and consolidated, and, clearing the intervening spaces, has fenced and brought into cultivation the continuous breadth of 150 acres, on which his excellent farm-house and buildings are erected. The lower parts of the farm consist of black earth, where cedar-swamps formerly stood, and of rich red clay. The higher parts are more sandy and gravelly—the looser *débris* of the same red rocks from which the red clay of the lower land has been derived.

Oats, barley, potatoes, and hay are his principal crops.

His turnip-culture is only commencing. His potatoes yield seventeen to twenty fold; and his hay, of which he has cut 140 acres, has yielded him, on an average, 3¼ tons an acre.

To his head-man, who is a Scotch grieve, he gives £4 a-month; and to his other farm-servants £2, 10s. currency a-month, besides their board and lodging; and they are engaged by the year. A few farm-servants, he said, would be sure of employment in this district at these wages.

I put down here, as it occurs to me, a caution to emigrants possessing capital—which will apply equally, I believe, to all North America, whether British or Republican—never to bring out men-servants under an engagement, and with the expectation that they will contentedly and honestly work for their employer till their engagement is fulfilled. Experience says that it is a bad plan, and never succeeds. The men soon begin to think they have been over-reached, and that they are cheated; and they either remain discontented and half useless, or they seek a quarrel with their master, or, without a quarrel, go off and leave him altogether. Ingratitude of this kind is all but universal. This is an evil for which human nature is to blame, and which has brought disappointment to the hopes of comfort entertained by many emigrant families, which, but for this unexpected occurrence, might have been fully realised.

I was interested by finding in New Brunswick, as in many places at home, the intelligence, energy, and business habits of the mercantile classes, turning themselves to the cultivation of the land, and exhibiting a warmer spirit, and more praiseworthy example of improvement, than is generally to be seen among those "to the manner born." It is a circumstance which, as a matter of history, is not undeserving of notice, that those countries which, in our time, have been most fortunate in com-

merce, have also advanced most in the art of persuading unwilling soils to yield continuous and abundant crops. In Holland, Flanders, and Great Britain, the wealth gained by commerce has permanently improved and enriched vast tracts of available land, and has redeemed to the use of man whole districts, which, in a state of nature, were wholly unavailable for the production of human food.

I have in almost every county at home remarked, that among the most zealous improvers were some who, retiring from commercial pursuits, came fresh to the tilling of the soil, untrammelled by prejudice, open to weigh fairly the chances of profit from this or that mode of husbandry, new to the district, and prepared, by previous habits, to prosecute with earnest attention what they had satisfied themselves was likely to promote their private profit, and the good of the neighbourhood. And here at Bathurst, in the case of Mr Ferguson and others, and again at Miramichi, at St John, and at various other places in New Brunswick, I found the most successful merchants the most active also in promoting agricultural improvement among others, and in setting, so far as their opportunities allowed, a valuable example by their own personal exertions.

The wheat-midge—which, as I have mentioned, has not as yet been observed on the Restigouche—is much complained of here, and has greatly injured the crops, especially of the French settlers. The consequence here, also, is similar to that which, in a greater degree, has taken place on the lower St Lawrence. The oat has been substituted for wheat on their farms, and oatmeal for wheaten flour as the food of their families. Twenty years ago, no oatmeal was used in the district; and though the cultivation of oats, and the manufacture and use of oatmeal, gradually became important, still, in 1845, no oatmeal was imported into Bathurst. Since that

year, the cultivation of oats has more than doubled; and yet, in 1849, nearly four thousand bushels of oatmeal, and six thousand of raw oats, have been imported. The extended culture and consumption of the oat is a favourable circumstance as regards the future welfare of the country, both because the climate is well suited to this kind of grain, and because the meal formed from it is an eminently valuable and nutritious food.

Up the Tatagouche River new settlements are extending, which have already reached the third concession. I visited these settlements, and drove up the river as far as an abandoned manganese mine, which is close to an interesting fall of the river, where it partly cuts its way through, and partly falls over, the edges of hardened slate-rocks. The soil is of third-rate quality, being composed generally of the sandy and gravelly drift of the red sandstones, with here and there a patch of deep-red loam, as we should expect from the breaking up of such rocks, and the sorting of their ingredients by flowing water. The settlers, also, are an inferior class to what I had seen twenty miles farther north. They consist of French and Irish chiefly, with a very few Scotch —men who have failed in lumbering, and who have taken to farming, not *with a will*, but as a *pis-aller*.

There is a good deal of squatting in this neighbourhood; and men buy and sell their holdings as squatters, though they have no legal title to the land. So far, however, the squatter is safe, as, according to provincial law, whoever subsequently buys the land from Government must pay him for his improvements. They thus have a sort of tenant-right, such as the Irish exercise or claim at home.

The French settlers here, as elsewhere, uniformly run out their land—in cases of succession, subdivide their farms into long ribbons—and are an easy, easily-satisfied, good-natured race. They never seek employment

so long as they have a barrel of flour in the house; and when they get work, they are not to be depended upon as servants. A trifle will take them away from their work; and so many church-holidays interfere with their regular operations — for they are all zealous Roman Catholics—that they are employed by British settlers who require continuous labour only when no other servants are to be had, or when they are willing to bind themselves to regular attendance, despite of their holidays. The result of such constant interference with the necessary labours of their farms, on the social and economical prosperity—especially of a people living in so short a summered climate as this—ought to be well considered by those clerical authorities who are said to be now devising means for inflicting this new evil on already sufficiently unhappy Ireland.

Oct. 14.—This morning was very fine, with a coldish wind, but a clear warm sunshine. I went to-day up the Nepisiguit river as far as the settlements extend, a distance of eight miles, and visited the Falls of the Papineau. From its mouth upwards, the Nepisiguit flows for the greater part of its course, wherever the rocks are visible, over slightly inclined red-sandstone rocks, which form a long rapid about three miles above Bathurst. At the falls, the river breaks through a barrier—either of granite or of hard conglomerate, I forget which—that separates the newer from the older rocks.

So far up the river, the land is either light and sandy, or stony, poor, and gravelly. This stony land extends several miles farther up; but, beyond this, a rich maple country is said to succeed, and to stretch into the interior for a great many miles. Generally, on this part of the Bay de Chaleur, the land is inferior for a dozen miles above the mouths of the rivers; but higher up the streams it improves. This inner country, however, is not yet opened up by roads, and is therefore not easily accessible

to intending settlers. A road from Bathurst across the province, which should strike the head-waters of the Tobique, and descend to the St John through the rich land which skirts the former river, would give many facilities for settlement, and for developing the resources of these northern counties. One may, I think, venture to predict that English travellers who, a century hence, may explore this northern region of New Brunswick, will find both much population and many fine and settled townships in the direction which such a road would take.

At the falls we amused ourselves by setting fire to the bark of the birch-trees, which, hanging in shreds from the stems, easily kindles on the application of a lighted match. Winding round the trunk, the flame ascends upwards to the branches, and speedily envelopes the tree, its arms and leafy twigs, in one continuous rushing pyramid of fire. This is a very beautiful sight in the day-time; but it is singularly so in the dark woods at night. It destroys the trees, of course; but, in these forests, trees are of no value; and it is to the making of such experiments that, in very warm and arid weather, the firing of whole tracts of forest are often to be ascribed. The birch-bark appears to be rich in some species of resin, which not only is the cause of its burning so readily, but also of its durability when used as the Indians do, for covering their wigwams; or as is done in Norway and Sweden, for the roofs of their houses.

In this part of the province, few farms are let. Those who have money, buy—those who have none, squat. I saw one farm, however, close to Bathurst, containing 150 acres cleared, mostly in grain, and yielding on an average a ton of natural hay an acre, which was let for £75 currency, but which, with the good house upon it, was considered worth £100. I have already, in a former chapter, explained that a large produce of hay is, in New

Brunswick, and generally in these northern provinces, considered indispensable to the farmer, as it is the sole means of sustenance hitherto provided for the stock during the long winter; and that hence the value of a farm is usually judged of by the number of tons of hay it is capable of producing. When the cultivation of green crops, and generally a better husbandry, is introduced, these customs will undergo important modifications.

The bad farming which prevails generally over all these new countries is to be ascribed mainly to the three concurring causes—that the emigrants who have settled there consisted, for the most part, of persons either altogether ignorant of agriculture, or knowing only how to farm badly; that they found nobody, in the districts to which they came, who were able to teach them or to set them a good example, or whose advice they would take; and that hitherto, no efforts have been made by the local governments, through the medium of the schools, to remove this ignorance, and to diffuse a knowledge of the principles on which agriculture may be profitably conducted, without permanent injury to the land.

It will occur to many who read these observations, that, among the emigrants from home, there are many who were born and brought up in the rural districts, and that these could scarcely fail to carry with them some knowledge of farming operations. But a little closer inquiry will satisfy us that, so far from being an advantage, this little knowledge is often a disadvantage to the emigrant settler. The small Highland or Irish farmer who is driven from his holding, because his face is set against all improvement—and many emigrants are of this class—carries his prejudice, his obstinacy, and his conceited ignorance to his new home; and leaves to his children as an unhappy legacy the same practices which, in his fatherland, had brought poverty upon himself. Better

an emigrant should know nothing of rural affairs when he arrives in a new country, than that he should be furnished with knowledge so little desirable as this.

In my excursion to-day I had the pleasure, among other persons, of the company of Dr Bishop, a practitioner at Bathurst of seventeen years standing. He assured me, as the result of his experience, that this country was one of the most healthy in the world; that during his seventeen years' residence at Bathurst, severe as the winters are, he had not known more than twenty persons who had died of consumption; that there were no epidemics, that few children died, and that the greater part of those who died in middle life were carried off by accidents.

Oct. 15.—After breakfasting with Mr Ferguson, going over his extensive saw-mills, and seeing a gang of his lumberers depart on their winter's expedition—stout able men walking alongside of a large sledge laden with stores, and drawn by four magnificent horses—we drove down the west side of the harbour to what is called Youghal Point, at its mouth, where we intended to ferry over and proceed on our journey along the Bay de Chaleur, through the parish of New Bandon.

Along the shore of Bathurst Bay we passed through some good farms, tolerably cultivated, very respectably ploughed, and occupied generally by thriving and contented settlers. They are chiefly Scotch and Protestant Irish from the north of Ireland. The use of lime and salt mud, from the head of the harbour and the river-mouths, shows that some ideas of improvement are making their way among them. This salt black mud is often really enriching, and is esteemed more highly than the farmyard manure which the Saxons settlers here are beginning to collect and apply to their land.

On the sands which border the shore at Youghal Point, I gathered the *Myrica cerifera*, which is so abun-

dant in many places that the French inhabitants collect it, extract the wax it yields, and make it into candles. Of these candles, which have a greenish colour, through the kindness of Mr Rankin of Miramichi, I was subsequently enabled to obtain a supply.

On crossing the mouth of the harbour we found our carriage waiting, and started on our journey round the north-east horn of New Brunswick, which is embraced in the county of Gloucester. To the Miramichi River by the direct road, is only 48 miles; by the road I proposed to take round the coast, it was 120. But it was a district rarely explored, and was the home, almost the inheritance, of French settlers; and my purpose was to become acquainted not only with the natural features, but with the material capabilities of what was represented by some as a valuable agricultural region.

In about a couple of miles we crossed the mouth of the Bass River, a small stream, and soon after entered upon a district of red land resting on the inferior beds of the coal-measures—red and green shales, indurated clays, and greenish-grey sandstones, which are quarried for grindstones. These greenish rocks appear, in many places, to crumble into a red soil. Though sometimes too sandy or too stiff, this red land, for a great distance along the north-east shore of Gloucester County, is of an open loamy character, easily worked, yet with sufficient body to form a generally useful soil, and resting on a scarcely pervious subsoil. In consequence of this latter circumstance, however, it presents a very interesting example of the relation which human art bears to natural capability.

I should say, from what I saw, that for nearly thirty miles along this road the soil is naturally such as to be capable of the highest cultivation which the climate admits of. But though it forms a table-land rising from

fifty to one hundred feet above the level of the sea, which beats against lofty cliffs, yet in many places this land is so flat that the water rests upon it, and alders and puny spruce cover its often swampy surface. Where the surface undulates, or gentle slopes prevail, hard-wood forests cover it, or clearings more or less extensive show what all the district will become when arterial drainage shall provide general outlets to the sea, and thorough-drainage shall convey into these greater outlets the superfluous water from the cleared and cultivated fields. The fine soils I passed—in many places wholly unfit to bear, in others capable of bearing only half a crop, from this natural superabundance of water —reminded me often of the rich red lands of the Lothians, and of other parts of Scotland, to which intelligent industry has imparted a material value, which, through the aid of human skill, the Deity, no doubt, intended it should attain.

Immediately along the coast, the land is generally cleared and cultivated. The New Bandon Settlement was the first we passed through. The crops of oats and potatoes were good and large, and the stubble-ploughing which we saw very creditable. The settlers, chiefly Roman Catholic Irish, originally from Bandon in the county of Cork, are for the most part miserably clothed, keeping wretched-looking houses, have much dirt about themselves and their holdings, nasty-looking pigs running about the doors of their dwellings, and their land and fences, for the most part, in an untidy condition. It is "Ould Ireland" over again transplanted here, little altered from its home appearance and fashions. And it is so, most probably, because the settlers came direct from their own country to this, and have had little opportunity, since they left their island homes, of either seeing or being taught anything not practised there.

The farms of the first concession, through which the

road runs, are cleared of wood on the side next the sea. Perhaps it was natural for the settlers so to clear them; but this circumstance also shows how much evil may arise from a little want of consideration and forethought. The open view of the sea, and the pleasant sea-breeze, are delightful in summer; but, in winter, the north-east wind, sweeping along the ice of the bay, comes up piercingly cold to the houses and land on the elevated shores, and the stock and family of the farmer both suffer. Hence the clearings in the woods—those of the second tier of farms, for example, which have the uncleared land of the first concession between them and the sea—are, as it is graphically expressed on the spot, a whole greatcoat in some places, a greatcoat and a pea-jacket in others, warmer than those by the sea. The importance of shelter to the crops we raise, and to the animals we feed, is now recognised and acknowledged by all improving agriculturists. In no part of the world is it more necessary that this importance should be borne in mind, than when the winds of the Gulf of St Lawrence rush up the bays, and beat upon the shores of North America.

Twenty miles from Bathurst we reached the house of a Mr Ritchie, at New Bandon, where I and my two travelling companions had been taught to anticipate comfortable accommodation. There are no inns along this road, but things are in that unsatisfactory transition state in which the traveller is received into a house as a great favour, and is afterwards expected to force into the hands of an unwilling host double the usual bill paid at a comfortable and willing hotel. We had considerable difficulty in getting into this house at all; and then we were at first offered one bed for the three, and finally were favoured with a shake-down in addition, on which I passed a very comfortable night. Our host was a farmer and a magistrate, and had we been made welcome we

should have passed an agreeable evening; but from that day we always looked forward with dislike to the necessity, which occasionally occurred, of lodging in the houses of persons who were too proud to receive us in the character of public entertainers. We always found ourselves on such occasions most uncomfortable, worst served, and at the greatest cost. But this is an evil which is incident to every new and little-travelled country.

Oct. 16.—After an early breakfast we left Ritchie's. He had a farm of good land, of great capabilities, bearing, among other crops, an excellent field of turnips, but partaking of the character of over-wetness, which distinguishes the district.

After a drive of six miles, we ascended a hardwood ridge of fine land, where the village of Grande Ance is situated. It is occupied by French habitants, who hold nearly the whole of the extreme north-eastern part of the province we are about to pass through. They are a better-looking body of men, are better farmers, and have better houses, than the majority of those of the same blood we had seen on our way to Bathurst from Dalhousie, or than I passed through last week on the Lower St Lawrence. This is no doubt to be ascribed in some measure to the superior quality of the land held by them here, and to the other advantages they enjoy along the shore. It is easily worked, and they have abundant supplies of sea-weed and of fish-refuse. They have good ploughmen among them, they fish a little, and they pay some attention to manuring the land with the products of the sea.

Man can perform wonders on the soil, but the character of the soil also—not always, but often—reacts upon him, and depresses or exalts his intellectual and social position according as its capabilities may be. Too profuse in its productions, or too stinted, it equally tends to debase, while moderate fertility keeps both the body

active and the mind alive. And when we consider how the soil is dependent for its productive capabilities on the rocks from which it is derived, we can see how the dead and sullen cliffs, with which the waves battle, along such coasts as these, actually indicate to the instructed observer the future character, intellectual and social, of the people who do or shall inhabit the country, and the kind of mental discipline they are destined to undergo, in persuading or compelling it to support them.

The element of race is one of the circumstances which will here occur to the reader, as necessary to be taken into account by the observer; and, in the present instance, it happens to have a direct application of a peculiar kind. When this country was held by the French nation, they had numerous establishments along the coast and islands, and possessed extensive fisheries. The Micmac Indians were also numerous, and it was the policy of the French Government to encourage intermarriages between the two races. An admixture of Indian blood, therefore, became very general among the French families, and those who are familiar with the Indian face profess to discover the Indian features among the Acadian inhabitants of this north-eastern promontory. It is not impossible that from this admixture a more energetic breed may have sprung up, and that some of the apparent superiority in condition of the people of this coast, above those of purer blood at Petit Rocher, may be due to this physiological cause.* It is equally

* Among the Indians, also, indications of white blood may be seen. I have in a previous chapter spoken of my visit to the Indian village at the mouth of the Tobique River, where I found them at morning service in their Romish chapel. Among a knot of these men, as I stood talking to them after service, I observed different shades of colour. They were evidently of mixed blood. I pointed to these diversities, and asked them how this one was so white, and that one so red. They could not tell, they said; and certainly they looked unconscious. The Indian blood is much mixed wherever the French have settled. They did not disdain Indian wives; and it was sometimes

possible, however, that, in establishing these fisheries, a different, and originally more energetic, portion of the mother people might be transplanted to this region, and that hence the superiority of the French population along this road may have been derived.

Pursuing our way along the coast from Great Ance, we descended again to the flatter and wetter land, and had reached the commencement of Waterloo Settlement, when, at what is called Sullivan's Corner, we turned off to the right, and went south to the mouth of the Caraquet River, and through the Caraquet Settlement, till we reached Mr Blackhall's, a distance altogether of twenty-two miles, where we stopped to bait our horses and ourselves.

This settlement of Caraquet seems very prosperous. Near the mouth of the river stands a large church, beautifully situated, and capable of accommodating 800 people. There is some rich land in the neighbourhood, and the population which frequents the church cannot be less than 2000. Great alterations have recently been made in their agricultural practices. Necessity, in fact, has compelled the introduction of changes, and a greater attention than formerly to the means of persuading the land to produce a sufficiency of food. The rotation formerly adopted almost universally was alternate crops of wheat and potatoes—the latter manured with the refuse of the herring and cod-fish caught so abundantly on their coasts. But both these crops have failed, or proved uncertain; and hence oats, Indian corn, or other grains,

the policy of their leaders to promote such intermarriages. In 1730 the *Illinois* professed themselves to be "inviolably attached to the French, by the alliances which many of that nation had contracted with them, in espousing their daughters." It is doubtless the same connection with the French, and with the early missions of the Jesuits—which stretched from the mouth of the St Lawrence to the banks of the Mississippi—that has kept them all true Roman Catholics to the present day.

have been introduced in their stead. This is nearly the case of Lower Canada over again; and every farmer will understand how much new thought and anxiety must have attended a total abandonment of an old-established and generally adopted course of husbandry. Out of evil, however, springs up good, and the habit of thinking forced upon this people must everywhere introduce new and better practices than were formerly in use.

Here, as in Lower Canada, the habitants are multiplying rapidly, and the settling and clearing of new land towards the interior goes on apace.

Mr Blackhall, who is an Aberdonian, received us kindly, and entertained us hospitably. His warmth was doubly grateful to us after the coolness of our previous quarters at Mr Ritchie's. He was stationed here as collector of the customs, had been long in the country, and pronounced it to be one of the most healthy in the world. He had a large family, he said, and, except chincough and measles, they had never had a day's sickness. How many other evils can be patiently borne where bodily health gives the free spirit a fair opportunity of exercising its self-sustaining powers?

It is interesting to observe how a man, when, as in a new country like this, he has "all the world before him where to choose," is biassed and determined in his selection of a new home—not so much by the absence of difficulties, as by the presence of certain qualities or circumstances which connect themselves in his mind with early habits and modes of procedure. Thus at Sullivan's Corner—at the commencement of Waterloo Settlement, of which I have already spoken—I found Sullivan an Irishman, an old Waterloo veteran, located on the edge of a black bog, such as he had been familiar with in his own country, in his early boyish days. How would that, to others chilling and unsightly, swamp be to him rich in cheerful recollections of a far-off home, and of times

when the sunshine had power to gild even the cabin and the bog, and happy enjoyment made thoughtless days pass away without a shadow of care!

And, again, Mr Blackhall has chosen for his house and farm almost the only rocky spot which this part of the coast-line affords. As he himself observed, it was such a place as only an Aberdeen man would have undertaken to clear and cultivate. In passing through Aberdeenshire, one can understand how the energy of the men of that country should there expend itself upon the difficult and costly improvements we find in so many places so perseveringly carried on. The easy land around them has all been subdued already to obey the plough, and only the rocky and stony tracts remain to be conquered. But here — and especially twenty years ago, when Mr Blackhall came—the land was before him, and better land is still within reach around him; but he prefers his stony spot. Does it remind him of home, and is he in this way bound to it? or is he more familiar with the removal of stones and rocks than with the tillage of kindlier land? or is there something in the blood of an Aberdeen-born man which makes the struggle with difficulties an element in his idea of happiness? How, in some parts of the world, do we find man, and the circumstances in which he is placed, most beautifully attempered to each other! It is not merely that man is gradually attempered to the circumstances in which he is placed; it is, as here, that man, already attempered, goes forth into the wide world, and selects from its endless variety that which is best adapted to him. Can it be, as some now begin to think, that the influence of circumstances in changing the habits of man and other races, has hitherto been greatly exaggerated?

Another form of these early impressions was a source of much amusement to me during my tour in New Brunswick. One of my companions in this tour was a

Scotchman-born—long a settler in New Brunswick, and who for twenty years had been a member of the Provincial Legislature. Political relations had connected him with the Irish Roman Catholics of the province, and he was particularly blind to all their faults and failings; while to those of the unhappy French Acadians his eyes were wonderfully open. A badly ploughed field, as we journeyed along, or an untidy fence, or dirty doorways, or long-legged pigs, uniformly indicated to him that the proprietor was of French extraction; and we occasionally made ourselves merry at his mortification on finding that those he had confidently pronounced to be French proved to belong to his favourite *Mickeys*—as the Irish Roman Catholics are nicknamed in New Brunswick. At last he confessed to his prejudice against everything French, and he traced it back to the early days he spent in Forfarshire, when the war with France was at the hottest, and schoolboy patriotism expended itself in devising most cunning and valorous schemes for destroying the hated Buonaparte and his bloodthirsty men.

Portable thrashing-machines travel the country at this season of the year, and are hired by the day to the farmers. The machine is driven by the horses of the person who hires, and is worked by the two owners who accompany it. The county Agricultural Societies have exerted themselves to introduce these machines, and where labour is scarce they are very useful; though the expense incurred by the farmer in hiring them still makes the thrashing a comparatively costly operation.

Mr Blackhall's stony land accompanied us for a short distance from his farm, after which we passed through excellent hardwood desirable land, till we reached the Pocmouche ferry. The Pocmouche is a small stream, which runs only a short course, but becomes of importance from its emptying itself into a wide arm of the

sea, which stretches ten or twelve miles inland—forming at high water a beautiful salt lake or loch, but at low water a wide flat of mud, through which the tiny stream winds its slimy way to the sea. We were unfortunate enough to arrive at the ferry when the water was low, and it was impossible to cross. But the tide was rising, the weather not unpleasant, though a little cold; and we wiled away the time pleasantly enough till the tide rose, by kindling a fire in the adjoining wood, heaping it up with fallen timber, and making ourselves comfortable around the roaring logs.

Crossing the ferry, we entered the woods again; and after twelve miles of good hardwood land, all awaiting the axe of the settler, and ready to reward his labour, we passed through what is called a Carriboo plain, three miles in width, and finally arrived, in the dark, at Little Tracadi. Here we were hospitably received, and comfortably entertained by Mr Young, a Scotchman from Dumfries—innkeeper, storekeeper, ferryman, and farmer on a large scale for the country. He was an old settler, and apparently an energetic and prosperous, though, where his French neighbours were concerned, a somewhat prejudiced man.

Oct. 17. — Since we rounded the north-east angle of the province at Caraquet, and left the Bay de Chaleur, the land has gradually declined to within a few feet of the level of the sea. It is occasionally undulated, but often stretched out in flats from which the water escapes with difficulty. On such a flat rests the Carriboo plain which we crossed last evening. Such plains are wide, generally dry, and open barrens, with only rare trees—but sometimes wet, and covered sparingly with stunted pines or alders. They are named Carriboo plains, because this animal frequents such places in winter, and used to or may still be found on them when the season of snow returns. There is much fine land around Little

Tracadi, and Young's farm is a portion of this. The population in the neighbourhood is considerable, and almost entirely French. Of these people, we saw a large number employed on Young's farm, in taking up his excellent crop of potatoes.

This low coast is indented with large lagoons, protected from the waters of the Bay of St Lawrence by narrow stripes of land—sandbanks, I suppose, thrown up by the strong tides, though I had no opportunity of personally inspecting them. The Tracadi lagoon is one of these, of six or eight miles in length, and in some places a couple of miles in breadth, and is named from two small rivers, the Tracadi and the Little Tracadi, which fall into it. At the mouth of the Little Tracadi, near which we now were, it was a beautiful sheet of water, skirted with rich low land, which again was girt about behind with fine old trees of the hardwood forest, through which we found it a pleasure to ride, when the warmth of the bright sun began to beat upon us.

We ferried across the lagoon to the site of the village, the church, the school, and the *presbytère;* and we paid a visit to a singular hospital for lepers, which has been established in this remote spot. The disease here called leprosy is confined almost exclusively to the French population, and to the north-eastern part of the province, between the mouth of the Miramichi and the Bay de Chaleur. It attacks all ages, is by some said to be either infectious or contagious—though others deny that it is either—and has prevailed for many years in this district, though public attention has been drawn to it only at a comparatively recent period. Nearly all the known cases are now collected in the small hospital at Tracadi, which has been established and is maintained at the expense of the Provincial Government. We found them to be thirty-five in number, including males and females, children and grown-up persons; and the picture

of hopeless misery which they used to present to visitors was described to me by one of my companions as absolutely heart-rending.

The disease is described as commencing its attacks by discolouring the skin of the limbs, giving rise at times to excruciating pains, fixing itself more deeply upon the extremities, rendering insensible the feet and hands, stiffening the joints, and gradually, by a species of dry gangrene, causing the fingers and toes to drop off. It attacks the face also, discolouring it, causing the features to swell, and in some cases inducing a diseased and ulcerated appearance, which is really frightful to look upon. The origin of the disease is unknown, as is also the time of its first appearance in the colony; and as the penalty for being attacked by it is separation from all friends, and perpetual seclusion with fellow-sufferers, by order of the Provincial Government, it is believed by many to be much more widely spread among the French population than it is publicly known to be. Some years ago, in consequence of representations being made on the subject to the Provincial Legislature, a commission of the most eminent medical men in the province was appointed to report upon the nature of the disease, and the best means of curing or repressing it. The members of this commission did not arrive at a unanimous opinion as to the nature of the disease—some regarding it, I believe, as the true leprosy of the ancients, and others as of venereal origin. But that it was incurable, and might spread, was generally agreed; and, therefore, that the confinement of the affected in a secluded hospital was a measure demanded by the public weal. The establishment of this hospital at Tracadi, and the removal of the patients from an island in the Miramichi, where they had formerly been confined, was the consequence.

At the time of my visit, a little hope had been inspired into the minds of the unhappy patients, through the

means of a French-born Canadian doctor, who had been permitted to test an opinion he had formed as to the nature of the disease, and was now residing at the hospital. He maintained that the disease was a chronic form of venereal, and that, by a judicious and prolonged use of the ordinary remedies for this disease, an alleviation, if not a perfect cure, might be effected. By the use of mercury, and prolonged, slowly induced, mild salivation, he had—if the patients themselves were to be believed—produced results of a remarkably beneficial kind. The colour of the skin had improved, swellings had subsided, ulcers had healed, pains in the limbs had disappeared, sensation had returned to the extremities, joints had lost their stiffness, and, what had no doubt aided the effects of his medicine, and was perhaps more valuable than all, hope and cheerfulness had entered and lightened the hearts of all. The possibility of a cure had driven despair from their minds, and the most cruelly affected had begun to dream of a return to their own homes, and to the society and affections of their kindred. Instead of the dull round of monotonous misery in which day used to succeed day, the fiddle, hanging from the wall of their sitting-room, showed that the music and dancing, in which the Acadians delight, brought now an occasional interval to their cares, and relieved the dull hours of their unhappy life. A visit to this house carried my mind back to the time when charitable men founded hospitals in England for the reception of patients, wretched, hopeless, and outcasts as these are; and I could not help wishing that this Canadian quack, as some called him, might prove to be right, and that his anticipations of success might be fully realised.*

* I have had the satisfaction of recently hearing from New Brunswick, that such has really been the case. Some of the afflicted, who had been separated from their friends and families, and kept in confinement for nearly twenty years, have been allowed at last to return

Leaving Little Tracadi, we drove for three miles through a pleasant hardwood forest, to the ferry of Big Tracadi, where we crossed another wide arm of the same lagoon. Thence to the mouth of the Tabusintac River, which falls into a similar large lagoon, we passed over twelve miles of a light sandy nearly barren surface, covered with scrub, or Prince's pine, (*Pinus inops*,) and sweet fern, (*Comptonia asplenifolia*.) Of the latter I have already spoken on several occasions. Both are eminently characteristic of the soils on which they grow—the sweet fern of a dry poor sandy soil, not altogether incapable of producing certain crops, and the scrub pine of a poor gravelly barren.

We were now travelling south-west, and had begun to round the mouth of the Miramichi Bay. Generally, along the coast-line at least, this is not a district which invites the attention of the European settler. After crossing the ferry of the Tabusintac, we rode for fifteen miles over poor and sandy land, till we came successively to the small rivers Naguac and Burnt Church, upon each of which we found small French settlements, and some land better than the generality of the country. We passed also through some miles of good unappropriated mixed hardwood land, forming an Indian reserve, of considerable value.

Dark night came upon us while still ten miles from Douglastown. We therefore gladly accepted the hospitable invitation of a Mr Davidson, who occupies a farm on the Miramichi River about this distance from Douglastown—and refreshed ourselves and horses by an hour's delay, in the hope that the thick darkness would pass away. This was not the case, however, and we started again, groping our way through the woods, and

to their homes. What is the happiest result of all, the disease is no longer considered incurable, and those who have it are not under the same inducements to conceal it.

reached Douglastown before midnight. I have on one occasion, in England, been out in an open carriage when it was found impossible to proceed on account of the darkness; but in our open country we cannot understand the utter blackness which descends upon a narrow road, bordered by a thick natural forest of lofty trees, when the short twilight of this season passes away, and clouds obscure the sky. Fortunately our road was good, and tolerably level, and the eyes of both our driver and his horses were more accustomed to such wood-travelling than myself; so that we crossed the Bartibog River in safety, and reached our destination before midnight without serious interruption.

One observation is due to the colony, that in this week's excursion I have found the roads everywhere surprisingly good for so remote a district of so thinly peopled a province. Indeed, for the large amount of their expenditure on roads and bridges, the provincial authorities are deserving of the highest commendation. In the province of New Brunswick there are at present upwards of 1270 miles of great or high roads, which are entirely constructed and maintained out of the provincial chest, and an indeterminate length of bye-roads, which are maintained by local assessment more or less aided, in the thinly-peopled districts, by legislative grants. The sums expended for these purposes by authority of the legislature, in the years 1847 and 1848 respectively, were as follows:—

	1847.	1848.
Great roads, .	£22,250	£24,622
Bye-roads, .	16,111	13,753
	£38,361	£38,375

If, as I have elsewhere said,* the roads are, in all countries, not only the most important agents in

* *Report on Agricultural Capabilities of the Province of New Brunswick.* Fredericton, 1850.

developing their natural agricultural resources, but are also an index of the zeal of those who govern in behalf of this fundamental interest of a state, and of their wisdom in encouraging the means most likely to promote it, we shall be inclined to look upon the governors of the poor thinly-peopled province of New Brunswick as much better friends of agricultural improvement than the servants of the great commercial company which directs the destinies of the rich and densely-peopled provinces of India. According to the recently published accounts of the India Company, for the year 1847-8,* there was expended upon "buildings, *roads*, and other public works," in the four presidencies respectively, the following sums:—

	Expended on Roads.	Population.
Bengal, .	£45,000	60,000,000 ?
North-Western,	48,000	
Madras, .	23,000	16,000,000
Bombay, .	38,000	3,000,000
New Brunswick,	30,000	210,000

If the East India Company be thought to have done enough for this branch of economy, we cannot withhold from the legislature of New Brunswick the commendation it appears to merit. I may add, however, for the benefit of the provincial grumblers, who think we quiet home people neglect them and their geography, that I scarcely found a single person in the other parts of the province, who knew anything about the roads and country I have come over during the past week. Even at Bathurst, numerous parties had to be sought out and interrogated before it could be ascertained that I should be able to take a carriage by that route all the way to Miramichi; and, after all, I had to start under some degree of doubt.

* Extracted from the *Times* for August 26, 1850.

CHAPTER XVI.

Miramichi.—Farms for sale.—Advice of an old Perthshire settler.—Influence of clearing the forests upon the local climate.—Adaptation of the flax husbandry to this country and climate.—Incidents of the great fire of 1825.—Breadth and velocity of the flame.—Its return up the river from Burnt Church.—Destruction of Douglas and Newcastle.—Great Darkness.—Distance to which the ashes were carried. Dry woods fired by lightning.—Influence of such natural fires upon the quality of the land.—Land on the north-west branch of the Miramichi River.—First and second growth of trees in the forest.—Opinion of the Presbyterian minister as to the healthiness of the climate and the prosperity of agricultural settlers.—Wisconsin fever.—Case of an Irish patient.—Sales of land in the north-western States an index of the intensity of the emigration fever.—Falling off of emigration to a state a sign that it does not answer the expectations raised regarding it.—Intelligent improvers at Chatham.—Improving influence of granite boulders.—Thorough-drainage on Mr Cunard's farm.—Growth of fruit-trees.—Beautiful ploughing.—A smashed carriage.—A second break-down.—Bear-trap.—Bears in the New Brunswick woods.—Reward for a bear's nose in the province.—Fallow-deer and wolves in the province.—Bounty for the destruction of wolves.—Former abundance of this animal in Maryland and Virginia.—Sweet-fern meadow.—Physical condition and state of the levels in a district modify very much the direct agricultural indications of geology and chemistry.—The former influence early settlement more than the latter.—Agricultural capabilities are progressive.—Practical surveys necessary.—Agricultural maps, their uses, historical, statistical, and suggestive.—Excursion up the Richibucto and St Nicholas rivers.—Hemlock-tree forests.—Distribution of this tree in the province.—Influence of the direction of the wind on the flow of the spring sap in the sugar-maple.—Progress of clearing in New Brunswick.—Alleged superiority of the flour of winter wheat.—Different quantities of water absorbed by different samples of flour.—Cause of such differences probably mechanical or physical.—

Scenery on the Richibucto.—Supposed richness of New Brunswick in fossil fuel.—Statements of local writers.—Exaggerated expectations in the province.—Seam of coal on the coal branch of the Richibucto.—Tea-dinner at the house of an Irish settler.—Eggs and potatoes.—Bridges in the county of Kent.—Wide river-mouths and estuaries along this coast.—Comparative influence of the Church of England clergy in the province.—Importance of forming settlements chiefly of one denomination of Christians.—Practice of the Roman Catholic French in this respect.—Opening on the Richibucto for settlers belonging to the Free Church of Scotland.—Cost of farms in this neighbourhood.

October 18.—We had not quitted our rooms this morning when Mr Rankin was already at our inn, to induce us to take up our quarters at his house. We availed ourselves of his pressing invitation, and spent two pleasant days under his roof.

In describing my former visit to Miramichi, I have mentioned the distress occasioned by the temporary failure of the lumber-trade on this river, and the numerous emigrations of idle and distressed persons in consequence. There is, therefore, a great wish on the part of the influential inhabitants of Douglastown and Chatham that a portion of the tide of immigration should be directed towards this place; and an Immigration Society has been formed to promote this object. I do not myself consider the land generally so good on the Miramichi as on the Restigouche River. Still, there are many good tracts of land in the neighbourhood of this river, and many partially cleared farms can be bought at present on reasonable terms, in consequence of the emigration of persons whose attention to lumbering and neglect of their farms had involved them in insurmountable debts and difficulties.

Among other persons, I had a conversation to-day with a very old man born in Perthshire, but who had been here for thirty-six years. From his experience, he said he would recommend his countrymen who meant to emigrate to come to the Miramichi; and that it was

better for a settler to buy a farm already partially cleared, than to go into the wilderness. He could buy for less than it would cost to clear with the help of paid labour, while he would also avoid the disagreeables of the untouched wilderness. At the same time, it pays the clearer, who expends only his own labour in the work, to go into the woods, take the first six crops, and then sell.

The reader will excuse me from doing more than merely reporting this old settler's advice. From what I have elsewhere stated, the home agriculturist will understand that the clearer, or first settler, is also, by his usual course of procedure in this country, a robber and exhauster of the land; and that he who buys a partly cleared farm, from which six or more crops have been taken, must be prepared to follow upon the cleared land a more generous form of husbandry than it has previously been subjected to, if it is to be made to produce satisfactory crops. Where the land is really good, however, this more generous husbandry is both easily attainable and followed by satisfactory returns.

The clearing of the woods in this country has the effect, not only of diminishing the prevalence of rust and mildew, which, near the river, are sometimes extensively injurious, but also of mollifying the climate. On the rivers which are bordered by burned or cleared lands, the ice breaks up, sledging ceases, cutting timber is stopped, and river driving and all agricultural operations commence a fortnight earlier than where the natural forest remains. Thus, on the whole, the temperature of the province will improve, and the season for rural operations lengthen, as the country is more cleared and becomes more thickly settled. At the same time, the aptitude of the land to grow certain crops, and for rural operations generally, may in reality be lessened, if, as on the Bay de Chaleurs, the indiscriminate cutting of the

timber allow the icy winds of winter, and the raw winds of spring, to sweep without opposition over the unsheltered surface.

The more extensive growth of flax has of late years been very much recommended at home—by some with the view of providing employment for the people, by others as a means of raising raw material for our increasing manufactures, now that the demand for raw cotton over the world appears to increase more rapidly than the production. To thinly-peopled countries like these of North America, where long winters and large families are apt to make idle hands while the snow is on the ground, the flax husbandry seems specially adapted. On the Miramichi, as on the St Lawrence, the crop thrives well, as I have no doubt it will do generally in the province; but it was mentioned to me, as an objection, that the hot summers are more favourable to the growth and ripening of seed than to the production of a fine fibre. This difficulty is by no means insuperable, however. The ripening of seed does not prevent the extraction of a fine fibre from the stalk, by the warm-water mode of steeping, to which I have elsewhere alluded. And if the local county or provincial agricultural societies give the subject a proper share of attention, there is no reason why we at home should not draw our supplies of linseed, for sowing or crushing, as largely from North America as we now do from Northern Russia; while, at the same time, the people of the province would obtain from the same crop both linen for their own domestic use, and employment for their idle hands in winter.

In describing my previous journey down the Miramichi, I have spoken of the burnt lands through which we passed, and of the bleak and desolate appearance they still presented, though the great fire which desolated them happened five-and-twenty years ago. In the course of this evening, Mr Rankin, in whose memory all the

horrors of that time are still fresh, interested us much by graphic details of his personal experiences when the fire appeared among them. It was an excessively hot summer, and fires were burning in numerous places upon the Miramichi and St John rivers and their tributaries; and the air was everywhere hot, and obscured with smoke. But on the 7th of October, it began to blow from the south-west, and the fire to spread over the country in the same direction. The wind increased gradually to a hurricane, and the fire advanced with proportionate rapidity. At one o'clock in the afternoon, it was still seventy miles up the river; and in the evening, it was at Douglastown. It travelled eighty-five miles in nine hours, so that scarcely on a fleet horse could a man have escaped from it. Lumberers already in the woods were caught, and solitary settlers with their families; and while all their property was destroyed, some saved their lives by rolling themselves in the rivers, till the scorching blast had passed over them. Instances of miraculous escape he told us—of parental devotion, and of selfish desertion; but the most striking things he mentioned were, that the flame, as it advanced, was twenty-five miles in breadth; that, coming from the west, it rushed past the towns of Newcastle and Douglastown, leaving a green margin of some miles in breadth between its southern edge and the river; and that when, in its easterly course, it reached Burnt-church River, the wind lulled, turned round, and drove the fire up the river again. It then came back along the green fringe it had left as it descended, and by the way licked up the towns of Douglastown and Newcastle—of their 254 houses leaving only 14. It was doubtless the rushing of the sea-wind from the Gulf of St Lawrence, into the huge fiery vortex, that drove back the flame when it had reached the open mouth of the Miramichi River.

At these towns, men and cattle rushed into the river; and though a hurricane was raging on its surface, people

hurried into vessels and boats and scows, and eagerly thrust off from the land. The lesser dread was forgotten in the presence of the greater. But although so huge a flame was raging, there was no light. Showers of ashes and burned twigs, and still burning brands, and thick smoke, filled the air; and for two days afterwards, amid a perfect calm, the darkness on the river was such that a bell was kept tolling on each bank to indicate the site of the ferry, that people might know where to steer to.

The town of Chatham, on the opposite side of the river, in a great measure escaped; but the Nassau Settlement, six miles behind it, was burned to the ground —the settlers only saving their lives by rolling themselves in the river till the flame passed away. In many streams, where the native woods still overhung them, the water proved insufficient to preserve human life; and the thousands of salmon and other fish found floating on their surfaces showed how intense and penetrating the heat must have been.

Over many other parts of the province, great fires raged on the same day; and the loss to the province, not only in private property, but in the public forests consumed, was immense. The loss of private property at Miramichi alone was estimated at £228,000. Nor, in such burnings, is the public injury confined to the old forest trees consumed, which it will take many years to replace, but the soil itself is permanently injured by every such visitation. The clouds of ashes borne away by the wind are an actual robbery by nature, and an exhaustion of the land. It is in this way, no doubt, among others, that land is destroyed, as the provincials term it, by frequent burnings.

On this occasion, cinders and smoke were observed at Quebec, on the banks of Newfoundland, and even as far off as the Bermudas.

Laws are enacted, in most parts of North America,

attaching severe penalties to the firing of the native forests; but in a new country they are mere empty threats. As a fact in natural history, besides, it is interesting to know that dry trees are sometimes fired by lightning, and, therefore, that such burnings of the woods must have taken place from time to time from the most remote periods. In explaining the peculiar character of the surface-soil in many places, a knowledge of this fact may not be without its use. Land of ordinary fertility must be impoverished by frequent burnings, if the mineral matter derived from the soil was every time carried away by the winds, and the organic matter in the soil itself was at the same time consumed by the fire.

Oct. 19.—A few miles above Douglastown, the Miramichi divides into two branches, where what is called the North-west Miramichi flows into the main river from the left. At the junction, this branch almost equals the main stream in width; but after an ascent of ten or twelve miles it rapidly narrows, becomes shallow, and splits up into numerous tributaries. I made an excursion of twenty miles to-day up this North-west Miramichi, in company with Mr Rankin and Mr Henry Cunard, as far as a hay-farm belonging to the latter gentleman. The land in general was light, poor, sandy, or stony, till we reached the mouth of the north-west Mill-stream. Beyond this it improved into a light reddish loam. Between the Little and the Great Sevogle—two feeders of the north-west branch which come in from the west—a flat of good alluvial land, about 5000 acres in extent, stretches along the main river. Through it the river winds, forming islands here and there, on which patches of alder-swamp are seen, and magnificent American elms skirting their banks, and farm-houses at various distances. A portion of this flat land is under arable culture, but most of it is kept in meadow for the winter's hay. Mr Cunard's farm was of this kind: it was cut for

hay every year, and the crop carried off by water to Newcastle and Chatham.

Farther up the river, tracts of hardwood land occur; but it is a consequence of the great fires which have devastated this region, that the indications of the natural clothing of wood, as to the value of land, cease to have that value and trustworthiness which they possess in other places. Since the great fire of 1825, for example, hardwood, chiefly poplar and white birch, with a sprinkling of maples, has taken the place of the pines, while these again grow almost alone on ridges formerly occupied by hardwood. It is true that, after a lapse of years, a sorting out of the trees less suited to the soil would probably take place; but some generations must pass before the forest will assume again the characters of what is called a first growth. This difference between a first and second growth is well known, and is always attended to by those who explore these woods with the view of judging of the agricultural quality of the land. Nor will this appear a difficult thing to do, when it is recollected that the size and age of a few very large trees will indicate the time which must have elapsed since a general destruction of the forest by fire has taken place.

Among other persons whom I met in the evening was the Presbyterian clergyman of Douglastown, a native of Scotland, who assured me, as the result of his long experience, that the winter here is on the whole as agreeable as at home. He prefers travelling, and makes all his visitings, in winter; finds his health better here, and that he is less subject to colds. Consumption has been more prevalent during the last few years, chiefly among young persons born in the country. He has known nine cases during the last two years; but it is quite a new thing, and the old-settled French Acadians are described as being entirely free from this disease.

As to the prospects of the working farmers on the

Miramichi, he informed me that, among his parishioners, *the industrious men who attend to their farms and let lumbering alone are all prosperous*, and that no such person need have any fear about making a living.

All these more eastern parts of North America are subject to occasional accessions of mental fever, which make the inhabitants restless at home, and determine them to try their fortunes anew in more western regions. They have, as I have elsewhere said, obtained as yet little *heart-hold* of the soil, and are therefore easily moved to quit it. Some idle fellow goes off to the west, and he writes to his friends flaming accounts of the country he has gone to. The news spread, and presently the fever smites some, and no considerations will restrain them.

Mr Rankin told me, among others, of a settler, an Irishman, who had a good farm on the Miramichi, but who had been seized by the Illinois or Wisconsin fever, and whom he tried in vain to persuade to stay on the Miramichi. Off he would go. He sold his farm for £250, and set off. "Some months after, the same man walked into my office at Newcastle. 'What, you here!' I said; and he explained to me that he had found things very different from what he expected, and that he had come back to see if he could get his old farm again. But he had only £50 of his money left, and the person who had bought his farm did not intend to give it up. 'Well, I advised you to stay where you were.' 'Sure, you did, sir, and I have suffered for my obstinacy; but I could never have been content to have remained here if I had not seen with my own eyes, and now I shall be a happier man.' And so he has gone into the wilderness again with his £50, to hew himself out another farm, and to begin the world anew."

These accessions of fever come on at irregular intervals. The Indiana, the Illinois, the Michigan, and the Wis-

consin fevers have all had their turn, and now the California paroxysm is at its height.

The intensity of these fevers, as I have already explained, is pretty well indicated by the yearly sales of public lands effected in the several States which awakened them.* For though the lands were not always sold to *bonâ fide* settlers, yet the sales were made at a time when the western tide was so strong that speculators looked forward to an early re-sale, and to the speedy realisation of large profits. In 1835, 1836, and 1837, the fever was highest in Indiana and Illinois, and the sales of land very great. Since that time it has nearly subsided, the unhealthiness of the rich lands in these States, to the unacclimatised, being alleged as one cause of this. In Michigan it was at its height in 1836, 4,000,000 out of the 9,000,000 acres sold in that State, up to the end of 1849, being disposed of in that year. The moisture of the climate of this lake-surrounded peninsula, the savannahs, which cover 4,500,000 acres of its surface, and the thin oak-barrens it possesses, being among the objections discovered to this State. The Wisconsin fever never raged so violently as those of the other States, the largest quantity of land sold in any one year being little over 650,000 acres. In 1836 it rose to this height, again in 1839, and in 1846 and 1847 it has, after a great falling off, reached the same amount. As I have not myself visited these States, I cannot of course judge so well of the representations by which the first great rush to these several States was excited. In so far as emigration from Europe is concerned, however, it must be considered as a bad sign of a State if the tide, having once set towards it, falls off very materially while there remain still large tracts of public land to be disposed of. There is a tendency in those who have gone before to

* See vol. i. p. 236.

paint their new homes in colours somewhat brighter than the truth, and, in those who follow, to proceed to and settle near those whom they have previously known. To a country of ordinary advantages, these influences will long keep up a flow of immigrants; and when they cease to operate, it may be inferred that its best lands have been taken up, or that disadvantages have been discovered which were not known so well before.

October 20.—Before starting on my journey towards the south, I spent a few hours on the south side of the Miramichi River, opposite to Douglastown, and walked over the farms of Mr Wright, Mr Peters, and Mr Cunard, all zealous improvers. It was very agreeable to me to meet here, as I had previously done at Dalhousie and Bathurst, with the intelligent directors of a county agricultural society, whom I found not only possessed of much knowledge and enterprise themselves, but desirous of diffusing knowledge, by every means in their power, among the farming population of the district.

Mr Wright's farm was chiefly upon a light, sandy, and stony drift. It was a remark made to me, both here and elsewhere in this district, that where the large stones on the surface consist of granite, the land is best and strongest. We were now upon the more siliceous sandstones of the coal-measures, which generally yield a poor and sandy soil. It is very intelligible, therefore, how granitic drift should stiffen and improve such soils, and how boulders, even of granite, resting for ages on the surface, should, by their gradual crumbling, augment the value of the land for agricultural purposes. It may have been, also, that the same cause which brought the granite boulders may have brought also the finer debris of the granite rocks, and spread it over or intermixed it with the more sandy soils.

I found the sowing of buckwheat to plough in green in practice here, the use of lime-composts, and other

signs of good husbandry; and upon Mr Cunard's farm a very well-executed and very successful experiment in the thorough-drainage of stiff clay land—the first I had seen in the province. It was satisfactory to learn from Mr Cunard, that drains cut to a depth of fourteen inches only, were found, after two years, to be uninjured by the winter's frost. The ploughing on this farm was excellent, and the wages paid to the ploughmen were £26 a-year, with board and lodging.

It is well known that the quality of both soil and subsoil have a very material influence on the growth of fruit-trees — the apple, the pear, the peach, and even the coffee-tree, refusing to thrive, or to continue bearing in favourable climates, if the soil be unpropitious. This fact is distinctly brought out in the case of the apple-tree at Miramichi. This tree does not thrive well in the natural soil. Suppose the surface good, the roots soon descend, and the branches begin to die. This is not uncommon anywhere; but it is important to the character of the climate of Miramichi, that, if a good deep soil be put under the young trees, they will thrive well and bear good fruit.

At two P.M., I started from Chatham for Richibucto, a distance of forty miles, which we expected to reach in six hours, the same horses taking us all the way. At the outskirts of the town, we stopped to look at a field where a ploughing-match had come off the day before. The work was beautifully done on the whole, would have been creditable to a field of Lothian or Ayrshire men, and was certainly the best I had hitherto seen on the American Continent.

We had a pair of nice-looking horses, and got on very well for a few miles, but by-and-by one of them began to dance and look uneasy. We descended to the Napan River, and crossed it in safety; but when we reached the Black River—a distance of scarcely eight

miles—this horse became restive, unmanageable, and started off. We were presently in the ditch, and, before we had time to upset, were brought up, when at full speed, by an enormous tree-root, against the jutting horns of which I had no hope that my friend the legislator, who sat in front with the driver, would escape being impaled. Fortunately, while the horses and driver were rolled in a heap together, his presence of mind had enabled him to dive beneath the dangerous projections, as he was driven through the air by the shock, and thus to save his life. My other companion and myself were thrown violently forward, but kept our hold of the carriage, and all escaped without any serious injury. But the carriage was a wreck. Pole, perch, whipple-trees, and upper works — all were smashed. Even our iron axle was bent, and the whole machine, thus early in our journey, rendered unserviceable. I felt no regret for any of these consequences, however, the almost miraculous escape of my travelling companion being an abundant reason for thankfulness.

But our plans for the day were deranged, and our intended progress prevented. We were detained a couple of hours on the road waiting for new, and rigging up our old, means of conveyance; and, after these matters were arranged, were obliged to content ourselves with advancing less than half-way to Richibucto, and with poor and uncomfortable accommodation for the night in a way-side inn, at the small Irish settlement of Bay du Vin, of which I have previously spoken.*

October 21.—Betimes, this morning, we started, to complete the remainder of our intended journey of yesterday. But our shattered carriage, which had been coopered up during the night, again failed us. Our wounded perch snapped fairly through, after a very few

* See vol. i. p. 111.

miles; and the ingenuity and constructive talent of my friend and companion, Mr Brown, had another opportunity of manifesting themselves. By the aid of ropes and young pines from the woods, the body of the carriage was, after the lapse of some time, propped up, and we were able to recommence our unprosperous journey.

While wandering in the woods, during our detention on the high-road, I stumbled upon a bear-trap, which some of the settlers had fitted up, and baited with a bit of salt-fish. It was very simply constructed with newly-felled trees, and so contrived that a tug at the bait would bring down a heavy log across the neck of the animal, and kill or strangle him on the spot. There are many bears still in the woods of New Brunswick, all, according to Dr Gessner, of the species known as the black bear of Canada, (*Ursus americanus.*) They live chiefly on berries in summer, but will sometimes attack cattle, sheep, and hogs. A reward of three dollars (15s. currency) is therefore offered by the province for every *bear's nose;* and the sum paid out of the provincial treasury for these noses amounted, in 1846, to £300; in 1847, to £225; and in 1848, to £385. From 400 to 500 of these animals, therefore, must be killed every year.*

It is a curious circumstance, in connection with the wild animals of New Brunswick, that the fallow-deer (*Cervus virginianus*) was not known in the province prior to the year 1818, when it and the wolf (*Lupus occidentalis*) appeared together. The deer is supposed to have been driven and followed into the province by the wolves, which have since been at times very numerous, and destructive to the flocks. The first wolf seen in

* "The flesh of the bear is savoury, but rather luscious, and tastes not unlike pork. It was once so common an article of food in New York as to have given the name of *Bear Market* to one of the principal markets in the city."—*De Kay.*

Nova Scotia was in 1845. They seem to be pursuing the deer towards the east, and probably both races will be exterminated together, as a high bounty is now offered in both provinces for the destruction of the wolf. They formerly existed in great numbers in the older States of the Union. So late as 1715, a former act was renewed by the Legislature of Maryland, offering "the sum of 300 lb. of tobacco" for every wolf's head that should be brought by any colonist or Indian to a justice of the peace. An act offering a similar reward, in the State of Virginia, was repealed in 1666.*

From the Bay du Vin River to the Kouchibouguac is a distance of twelve miles, over a flat country, resting on the sandstones of the generally flat coal-formation of New Brunswick. For a few miles south of the former river the soil is reddish, strong, and capable of improvement by drainage; but only a few clearings, apparently very recent, were to be seen. I have already said that in New Brunswick a wet country is not unhealthy, or productive of fevers, as in our climate; but to clear and drain land both is too expensive for the settler. Such wet lands, therefore, will be slowly cleared and reclaimed by private parties. The remaining distance to the Kouchibouguac was poor, sandy, flat, wet, boggy, and barren. The undersoil was composed of fragments of the unpromising grey sandstone, through which the surface-water did not penetrate. Where dry patches rose above the ordinary level, they were covered with sweet fern, forming a perfect sweet-fern meadow, of large growth. We had not observed this plant in any quantity since we left behind us the poor sandy country

* *Graham's Colonial History*, i. p. 339. Payments were, in those times, very generally made in tobacco. Members of Council were allowed a daily salary of 180 lb., and Members of Assembly of 150 lb. of tobacco. This payment in kind must have been quite as unsatisfactory to the "Old Virginians" as the system of barter now is, of which some of the New Brunswickers in the remote districts complain.

between the little Tracadi and the Tabusintac, on the south-eastern shores of Gloucester County.

Along either side of the Kouchibouguac the land is good and strong; but immediately south of this fringe it resumed the light, sandy, impervious, and often wet and boggy character I have already described—bearing stunted pines and rhodora, and, where free from water, the sweet fern. And so it continued as we successively crossed the rivers the Kouchibouguasis and the Aldouane, all the way to Richibucto. These two streams, where the road passes over them, exhibited less of that good land which is usually seen along the banks of the rivers.

I may advert here to a reflection which frequently crossed my mind, as I travelled over this and other parts of the newer countries of North America, that an important distinction must often be drawn between the actual or present and the future or possible capabilities of tracts of land which lie on the same geological formation, and of which the soils possess the same chemical and mechanical characters. Absolutely considered, soils which have the same geological, chemical, and mechanical relations ought to be equally productive. But if their natural conditions be unlike—in respect, for example, to the drainage of water—one may be of great immediate value, and be in little time, and with little cost, rendered capable of supporting a large population; the other may be wholly useless, and may lie barren and unimproved for numerous centuries.

Thus, much of the absolutely good and capable red land of the New Bandon district in the Bay de Chaleur, and still more, perhaps, of the heavier land between the Napan River and that of the Bay du Vin, is too wet for cultivation, and often covered with swamps, because it is too level to allow the surface-water a ready means of escape. Yet this swampy and inhospitable tract, if laid

dry, is as susceptible of agricultural improvement, and of being made a source of rural wealth, as the apparently richer patches which rise above the common level, and naturally free themselves from superabundant water. Contrary, therefore, to the indications of both geology and chemistry, thousands of acres in these countries, which will at some future period yield abundant crops, must, in actual circumstances, be pronounced to be almost worthless.

It is, in fact, physical characters such as this, in conjunction with the mechanical conditions of the soil, which determine the first settlers in every country in their choice of land. That which is easily reclaimed, and can be cultivated at little cost of labour, is not always better—often not even so good—as that which long lies uncultivated and unesteemed. In England, in those districts where clay soils, more or less cold, extend over considerable breadths, the oldest towns, villages, and churches, are almost invariably situated on banks, ridges, or hills, of lighter land, sandy or gravelly often, but which was originally dry and easily tilled. From these spots, as centres, in the progress of population and of peaceful pursuits, improvement by drainage and other necessary means spreads itself over the adjoining, originally altogether neglected and untillable, moister flats and clays.

Thus the agricultural capabilities of a country are progressive. As they decrease where an exhausting system of culture is followed, so they increase where the means of improvement are understood and sedulously adopted. And that this progressive increase may continue for a long series of years before it brings into practical use the possible capabilities of large tracts of land, is illustrated very strikingly by the case of Great Britain, where for so many centuries great skill and intelligence have, in so many places, been applied to

rural affairs, and where, nevertheless, much land is still in course of being doubled or tripled in value by the application of thorough-drainage alone.

It thus appears that, although geological maps are of great value in giving general notions of the agricultural character and capabilities of the countries to which they refer, yet purely physical conditions may for the present render such indications untrue for very extensive areas. An actual survey or inspection of a country, therefore, becomes necessary for this, *among other reasons*, that the indications of geology may be tested, and the real present worth of the land on the several formations ascertained. Agricultural maps might from such inspections be constructed, which would show by different colours the *actual present* capabilities of the several parts of their surface, and the *future or possible* capabilities; and these maps would serve the triple purpose of exhibiting—*first*, The actual condition and capability of the soils at the time when the map was constructed, forming thus an important historical document; *second*, The possible or attainable capability—and thus stimulating at once to improvement, and indicating the means by which it is to be effected; and, *thirdly*, The relation which exists between geology and agriculture, and generally, therefore, the relation which science bears to this important art. It was under this persuasion that, to a "Report on the agricultural capabilities of New Brunswick," which I drew up at the request of his Excellency the Governor of the Province, and of the Provincial Legislature, I attached, along with a geological map, a map also of the soils of the province, and their capabilities, as complete as my means of acquiring information enabled me to make it. Such a map of our own islands would be not only a most interesting document, historical, statistical, and suggestive, but would be the means of stimulating many to exer-

tions in the way of rural improvement which might not otherwise be either thought of or undertaken.

It was about two P.M. before we reached Richibucto in our shattered vehicle; but we were still in time to attend afternoon service in the Episcopal church.

Oct. 22.—The town of Richibucto stands at the mouth of a river of the same name, which, like many of the other rivers along this coast, forms, in its lower part, a wide irregular tide-water creek, running back into the land for nearly twenty miles above the town; while below the town it opens out into a wide sea-harbour, frequented by shipping.

I enjoyed to-day an agreeable drive of upwards of twenty miles up the south side of this broad tide-water portion of the river, and one of its tributaries. For eight miles the land was dry, gravelly, and poor, and for four more, only interspersed with patches of superior land. But beyond this, and west of the south branch of the St Nicholas River, a tributary of the Richibucto, excellent land occurred; and it continued of good quality as far as we were able to penetrate.

The prevailing tree on this upper part of the river was hemlock, *Pinus canadensis*, mixed with some white pine, and with birch and beech. None of my companions had ever seen the hemlock so abundant in any other part of the province. From the information we received, these trees prevail over a belt of twenty to twenty-five miles wide, as far west into the wilderness as a remarkable bend of the Salmon River—a tributary of the St John, which flows westward—known as the Ox-bow of the Salmon River. Many magnificent stems rose here and there among the woods through which we passed, and where clearings were in progress. It struck me as almost amounting to desecration to see those ancient trees cut down while still sound and vigorous, and either

condemned to the pile, or left heedlessly rotting on the ground.

The hemlock is not regarded as indicative of any peculiar quality of soil; and yet its distribution in the province is somewhat singular. It does not occur, it is said, in any sensible number on the St John River, above the Grand Falls, or on the east coast north of Belledune, on the Bay de Chaleur. And yet there are suitable soils and tracts of country north of these points, equally mild in their climate with the districts in which it is found. Of course, this selection of a habitat is not an effect of caprice, and the cause of it would be interesting to ascertain. Can it be connected with specialties in the summer or winter means of the places in which it thrives, or even of the monthly means which, as we now begin to see, exercise an important influence in determining the localities in which plants can permanently grow?*

The maple is not much attended to in this district by the English settlers for the manufacture of sugar. In our conversation on this subject, however, Mr Brown mentioned to me, as well ascertained, a curious circumstance in regard to the flow of the sap of the maple-tree in early spring. The flow sometimes begins as early as February, but generally in April. After a frosty night in April, the snow being still on the ground, the sap will flow freely after sunrise, *if the wind be west, north-west, or north.* But if the wind be south, the sap comes sparingly; and if, while it is flowing freely, the wind change to the south, the flow will diminish, and gradually cease altogether.

Of course, this curious fact must be connected with the quality of the wind, and the aspect of the sky when it is blowing. The April mornings are remarkably

* See DOVE's Maps of Monthly Isotherms.

clear when the wind is northerly; and, consequently, the light and heat thrown upon the tree, and any other influences, chemical or actinic, which the sun's rays bear with them, are proportionately great. The wind itself, also, is cold and very dry. The south wind, blowing from the Gulf Stream, though warmer, is moister, is attended also by clouds and mists, and usually ends in rain. The heat, light, and surface evaporation, being therefore less when the south wind blows, the flow of sap to supply the latter may decrease in consequence. It is possible, however, that the chemical influences of the rays of the morning sun may enter as a sensible element into the case.

One does not see in this and the adjoining province of Nova Scotia, which lie remote from the common route of emigrant settlers, that wholesale system of clearance and frenzied cutting and burning of the primeval forests which are witnessed in some parts of Upper Canada, and in the newer States of the west, to which the fever of the year may carry the European crowds. And yet, upon the whole, in this province a great deal is doing. It is necessary to penetrate into the wilderness in various directions, and from various points, as I have done, to obtain anything like a true idea of the actual progress of the agricultural industry of the colony. In such a course of exploration, we see a little doing here, and a little there, over the whole wide area of the province, wherever anything like a passable track has yet been cut into the wilderness; and if we put together in our minds the numerous small operations we have thus seen going on, we shall conclude that, on the whole, as I have said, a very great advancement is making. Still, as the surplus produce of the cultivators is by no means sufficient to meet the demand for wheat and oats by the other inhabitants of the colony, and the prices of produce, as I shall afterwards more fully show, are really high, there is every encouragement to the rural popula-

tion and settlers vigorously to prosecute their cultural operations.

Against the flour of province-grown wheat, however, there is a prejudice which I have found prevalent over a large portion of New Brunswick, and which is distinct from the prejudice of the lumberers in favour of the fairest, and finest, and highest-priced flour. I have already stated, that nearly all the wheat of this province is spring wheat, and the prejudice is in favour of the flour of fall or winter wheat—that it is more nutritious. It is said that the flour of winter wheat will take more water, and make more bread, and that a cask of it will go farther in the feeding of a family. I may be wrong in speaking of this preference as a prejudice, since it is not impossible that the winter-wheat flour may really be drier, and may therefore contain more nutritive matter in a given weight; or the dry matter in the one may be of a more nutritive quality than in the other, and more suited to sustain a hard-working or growing family.

That different samples of flour take up different proportions of water, has been long known both to millers and to bakers. That of southern or warm climates is usually considered the *strongest*—capable, that is, of taking up most water. In the United States, for example, the advantage in using the flour of Alabama wheat above that of Cincinnati is said to amount to 20 per cent, which is surely an exaggeration. But it has not been shown that this capacity for water is regulated by, or is in any way in proportion to, the natural dryness of the flour. The quantity of water contained by flour, when brought to market, varies, in extreme cases, from 11¾ to 14 per cent, the average being about 13 per cent. But as the quantity of water absorbed by flour, when baked into bread, is about one-third of its whole weight, it is obvious that an original difference of 1 or even 2 per cent, in the

proportion of water, cannot seriously affect the *strength* of a sample of flour in the hands of the baker. Its power of absorbing water, therefore, is dependent either upon the mechanical and physical conditions of the constituents of the flour, or upon the relative proportions in which these constituents are contained in it.

The proportion of gluten which can be extracted from samples of undamaged flour usually varies only 1 or 2 per cent. Among varieties of sound American flour from the different United States, according to Dr Lewis Beck, the extremes are 14·36 per cent in a sample from Georgia, and 9·9 per cent in a sample from Illinois.* I do not think these differences either—supposing them to exist constantly between winter and spring corn, which has not been shown—are sufficient to account for the differences observed, both in America and in England, in the so-named strength of flour. If not, the cause must be mechanical or physical. That which takes up most water is, I believe, generally made from a *flinty* corn.

But, if merely mechanical or physical, is not the notion that the strongest flour is also most nutritious to be regarded as a prejudice? This also is uncertain, as that same property which influences the absorption of water may also influence, in some way, its power of feeding, when introduced into the stomach. Notwithstanding the light which chemistry has already thrown upon this important branch of rural economy, the subject still presents a most interesting field for further investigation.

There are some pretty pieces of scenery on the broader parts of the Richibucto. I particularly admired the view which opened upon us in ascending, when we reached the point where the St Nicholas falls into the Richibucto. The two streams meet at an angle, and

* *Patent Office Reports*, 1848, p. 272.

between them a somewhat elevated promontory or point of land juts forward into the mingling waters. On this promontory stands the Roman Catholic church, large as they usually are in the country districts of these provinces, forming an object on which the eye could rest; while right and left, fringed with trees, and winding round the land, the water expands in front of it, and the background of native forest-trees encloses the cleared land on which it is placed. There is good land and some fine farms in this locality, and some fine timber still remaining. And as the sun shone upon the mingling tints of the coming autumn, the lighter yellow of the white birch and poplar contrasted not too violently with the dark-brown leaves of the beech and the perennial green of the pine-trees, giving a cheerfulness to the landscape which was very pleasant to look upon.

At the head of the wider part of the Richibucto, a stream flows into it, to which the name of Coal River is given, from the occurrence of a bed of coal a few miles above the junction. One of the objects of my excursion to-day was to visit this seam of coal, and to form an idea of its economical value.

It is known, by the maps and statements which have already been published, that a large portion of the surface of New Brunswick—an area of seven or eight thousand square miles—is occupied by coal-measures; and it has been stated—and is, in consequence, I believe, generally thought in Europe—that the province is exceedingly rich in fossil fuel. Dr Gessner, late provincial geologist, speaks of the coal of New Brunswick "as sufficient to supply Canada, and all the demands of the extensive coasts of the Gulf"—as being "inexhaustible"—and reasons upon the "importance to which New Brunswick is destined to attain, as regards not only herself and her sister colonies, but Great Britain also, and the United States, whose supplies of coal must

to a great extent be derived from her resources "—that is, when the coal of Great Britain and of the United States shall have been exhausted!!

Such statements as these were likely to induce a belief in the minds of foreigners that large available beds of coal had really been discovered in this province, and to create among its inhabitants the impression that, when the lumber of the native forests was exhausted, a sure source of manufacturing and commercial prosperity would remain in the ample stores of mineral fuel which a bountiful nature had buried beneath their feet.

When the resources on which a country has hitherto depended appear in danger of being exhausted, it is of the greatest possible consequence that the community should know what other resources remain on which it may hope reasonably to fall back. In the case of New Brunswick failing its lumber—were its mines to support it? was naturally asked—or must it rely in future mainly upon its agriculture? It was thought by many, that because the province was unable as yet to support a population of 210,000 inhabitants without large importations of foreign grain or flour, that therefore its purely agricultural capabilities were small, and that for future greatness or prosperity it must look to its mines alone. Though I had already seen enough to enable me to conclude that such persons greatly undervalued the food-producing ability of the colony, I was not, from personal observation, aware how far the known deposits of coal were really economically valuable; and I was desirous, therefore, of obtaining positive information upon this point wherever an opportunity presented itself. It is an interesting fact, which I shall hereafter briefly illustrate, that the existence of fossil fuel in a country is not only economically valuable in relation to the smelting of ores, and the general support of manufacturing industry, but has also a direct and important relation to

the agricultural capabilities of a country, and its power of supporting a large population. In this latter relation, therefore, the inquiry possessed an additional interest to me, which, to those who regard it in its direct economical bearing, it does not possess.

From the seam of coal on the Coal branch of the Richibucto, it was stated that some tons of coal had been extracted during the frosts of a past winter, and conveyed away on sledges for the use of some adjoining smithy. We discovered it with difficulty among the rubbish of the crumbling cliff. It had a thickness of twelve to sixteen inches, and occurred among beds of sandstone and whitish fire-clays. As an economical deposit, it is almost worthless.

We were accompanied in our exploration through the wood, and by the side of the stream, by one of the old Irish settlers on the Coal Brook; and on our return were compelled, by the pressing hospitality so often met with, even in the roughest cabins of the Old Country settlers, to partake of a tea-dinner in his house. I here for the first time ate buckwheat pancakes with molasses, which I afterwards came to relish much. I learned also to eat boiled eggs with potatoes, instead of bread. When mixed up with a crushed potato, a fresh-boiled egg is really very good, and bread is scarcely missed. Indeed, if the traveller in New Brunswick is fond of tea and potatoes, he will find them set before him at every meal; if he does not relish these two articles of diet, he must either for the present turn his footsteps to some other country, or, to prevent disappointment, carry his own supplies with him.

After a drive of forty-five miles, we returned to Richibucto just as the twilight was disappearing. We had to hasten our return, that we might pass along certain of the bridges before it became too dark to see, and avoid some of their defective parts.

I have already expressed my opinion of the exertions made in this province in constructing and maintaining roads and bridges. The reader will have a more definite idea of the amount of industry and expenditure lavished upon this branch of provincial economy, by reading over the following incomplete list of the wooden bridges of a larger size which have been built, and are maintained, in this county of Kent alone, of which Richibucto is the county town.

	Feet in length.
Little Shediac bridge, . . .	175
Cocagne do., . . .	2000
Little Buctouche do., . . .	1300
Big Buctouche do., . . .	1500
Richibucto do., . . .	1300
330 feet of which are 50 feet above low-water.	
Davidson's Creek do., . . .	400
Blanchard's Creek do., . . .	430
D'Aigle's Creek do., . . .	690
North-west River do., . . .	630
Kouchebouguasis do., . . .	750
Kouchebouguac do., . . .	300

The energy displayed in executing all these works will be appreciated also from the fact that, twenty years ago, there were not twenty miles of turnpike in the whole of this county.

The necessity for such a number of long bridges arises from the circumstances—to which I have already adverted, in one or two particular cases—that the mouths of the rivers along this low coast all terminate in wide creeks or inlets, which occasionally stretch, as the Richibucto does, far into the land. This is probably connected with the additional fact, that the quality of the land has a certain reference to the coast line—a belt of poorer, generally sandy or stony land, of six to ten miles wide, running along the shore, and behind this a belt fifteen miles wide, of better, often very good land. The existence of these belts, and of the wide river-

mouths, may both be related to the more recent and successive upheavals which the shores of the Gulf as well as of the River St Lawrence are believed to have undergone.

On the subject of emigration to this province, Mr David Wark, member of the Provincial Legislature for the county of Kent—who accompanied me during this day's excursion—drew my attention, among other important points, to the fact "that extensive settlements are now frequently met with, containing neither a church nor a resident clergyman of any denomination." The Church of England claims to be established in the colonies; but it has in reality no power, no peculiar influence, and no funds. It has, in fact, in these colonies less hold upon the people than either Presbyterians, Baptists, or Roman Catholics, because its clergy have hitherto been supported as missionaries, I believe, by the Propagation Society at home. Being independent of the people in pecuniary matters, they have not cultivated them as the other sects have; and till they are disengaged from home dependence, and are thrown upon the liberality of their own people, will not compete on equal terms with the rival denominations. It is in human nature to value and esteem most that which we ourselves contribute to uphold.

The cause of this religious destitution of many large settlements, Mr Wark finds in the fact that they are composed of different denominations of Christians, none of which is sufficiently numerous to support a clergyman. The French population pursue a different course. Instead of forming small detached settlements, or mixing with other denominations, they extend their own settlements till each is able to erect a church, and support one or more schools. This course is worthy of imitation. "I know Presbyterian settlements not able to contribute half the support of a minister, which are capable of

being extended over contiguous tracts of fine land till they would form respectable congregations; and, in other parts of the province, there are, no doubt, other denominations similarly situated."

There is much reason, sound judgment, and right feeling in these remarks of Mr Wark, who himself, I believe, belongs to the Free Church of Scotland. The Presbyterian settlements he alludes to belong also to this denomination, and the prospect of at once aiding their brethren, and securing religious advantages to themselves, may probably turn the steps of some of the Free Church emigrants to New Brunswick, towards the town and river of Richibucto.

The price of partially cleared farms of better quality in the neighbourhood of Richibucto varies with the proportion which is cleared, and with the kind of buildings which are upon them. Mr Wark has two farms, one of 150 acres, three miles from Richibucto, all cleared, for which he gave £350 currency; and another of 170 acres, all cleared, a little nearer the town, with better buildings upon it, and better land, for which he gave £600 currency.

The best land, however, as I have said, is farther up the river, and there the price would probably also be less. The heavy hemlock land, if bought in the uncleared state, will cost 50s. to 60s. to clear and burn it; but the first, or first two crops, are believed to pay back all this expense.

CHAPTER XVII.

Galloway settlement.—Glenelg settlers.—Buctouche River.—Shediac.—French settlement of Barachois.—Experience of M. Robichout.—Character of the south-eastern promontory of New Brunswick.—Numerous house-burnings.—Idle young men.—Effects of the drought.—Tingley's.—Mr Murray's farm and success.—Marsh-lands.—Employment of hired labour, Mr Murray's opinion.—Prudence as necessary as knowledge in farming.—Rocks on the coast.—Red drift.—Red rocks of Cape Tormentine.—An Irish settler's *luck* in land.—Bay Verte Settlement.—Rich land and cheerful houses.—Joliecœur Settlement.—Valley of the Missiquash.—Proposed Canals and Railways.—Formation of the Flat Valley.—Cumberland fort and ridge.—Extent of the rich marsh-lands.—Produce they are capable of raising in corn and cattle.—Town of Amherst.—Minudie Flats and Ferry.—Blue mud.—Undulating surface of gypsiferous land.—Cup-shaped hollows.—Abadeaus, or river-sluices.—Town of Sackville.—Methodist Academy.—Quality of the marsh-lands.—Geological structure of the valley.—Scooping out of the marsh-flats.—Mr Morris, a prosperous Aberdonian.—Grinding and growth of Buckwheat.—Bogs in the inland part of the marsh.—Mode of improving them.—Canals like those of Lincolnshire.—The bog sinks by drainage.—Greater height of tidal waters inland.—Richness of the warp-land produced by the flooding.—Town of Dorchester.—River Memramcook.—Shepody Ferry.

October 23.—For Shediac—a name which, in the mouth of every real Blue-nose, awakens the flavour of oysters—we started early this morning. Turning a little from our way when a few miles from Richibucto, we paid a hasty visit to the Galloway Settlement. A number of Scotch families, from Wigton and Kirkcudbright chiefly, were here thriving on land which was rather vexed with

stones, and decidedly inferior to what we had seen yesterday up the river.

A sandy, flat, often barren wilderness, on the grey-coal sandstones, with few clearings, accompanied us to Stevenson's, eight miles from Richibucto, after which the land began to reassume the reddish hue we had been familiar with in New Bandon and Caraquet, and which had disappeared before we reached Little Tracadi. This red colour became very decided when we crossed the Big Buctouche River, and deepened, and continued during our after-journey as far as Cape Tormentine, and round by the Bay Verte into Nova Scotia, on the head-waters of the Bay of Fundy.

Four miles beyond Stevenson's, near a small stream called the Black River, we began to pass through the Highland settlement of Glenelg. The country is undulating, and the land red, lightish, useful, and, though not of first-rate quality, superior to that of the Galloway Settlement. But it was badly farmed, and the settlers neither so industrious nor so prosperous as those of Galloway. I suppose they had each brought with them the habits and modes of farming which distinguish the people of southern Scotland and western Inverness respectively; and that the farming of these two parts of their native country reappeared, in consequence, upon their new farms in New Brunswick.

The Glenelg people are said to be fond of the music of the hereditary bagpipe, of dancing the Highland fling, and of sipping mountain-dew distilled from Jamaica molasses. "What's bred in the bone," said one of my companions, "is ill to drive out o' the flesh."

While we stopped at the Big Buctouche to bait our horses, I hired a light waggon and drove a few miles up the one side of the river to the head of tide-water, and down the other side. The land was reddish, light, and in some places stony, but useful. When manured and

properly laboured, it was described as certain for potatoes and grain, though inferior for grass. It is a country for high-farming and a skilful rotation of crops. But the farmers, chiefly native-born, (Blue-noses,) mixed with a few Irish, were much in the condition of the Macintoshes of the settlement of Glenelg. They had engaged in lumbering to the neglect of their farms, and were suffering in consequence; but the conviction was now spreading among them that farming is a more certain means of livelihood, in this country, than any other in which they had hitherto been engaged.

South of the Buctouche the country is occupied almost solely by the Acadian French, who are numerous in this district, but, as elsewhere, are not great farmers. Instead of proceeding by the direct post-road, as in our previous journey, we turned to the left and rounded the coast. The soil proved to be light; and though it was usually formed of red drift, the grey sandstone rocks come often to the surface, and make it in many places difficult to cultivate, and poor in the returns it yields. Some ten miles inland, and west of the post-road, the land improves; and a new French settlement—the Ohio Settlement—is rapidly extending itself. From what I heard of the rapidity with which the French are taking up and occupying this country, I suppose they must have something of the faculty of family increase which distinguishes the same race on the Lower St Lawrence.*

On the right bank of the Cocagne River, we found a few English settled; but the rest of the country, as far as Shediac—chiefly a rich red loam—was in the hands of the French.

Shediac, as I have already said, is a scattered village of about twenty good houses, occupied by storekeepers and lawyers. It is a sea-port, also, with little trade, and is chiefly famed for its oysters.†

* See vol. i. p. 340. † Vol. i. p. 115.

Oct. 24.—An interesting red land district, peopled chiefly by French, forms the south-eastern promontory of New Brunswick—where it approaches nearest to Prince Edward's Island, and touches the north-western border of Nova Scotia. For a tour round this promontory, we left Shediac early in the morning.

Crossing the river Scadook, we passed through a small village clustered around a saw-mill at its mouth, and the farms of a few English settlers, and entered the French settlement of Barachois. The good report we had heard of this fine settlement was borne out by its appearance. The land is good—lightish red land, dry, and easily worked. About the church there is quite the air of an old place. The houses are good; the forest has retired from the road; orchard and other trees, planted by the hand of man, here and there cover the ground; and though signs of indolence appear now and then, and badly ploughed land—which my companion, the legislator, was always sharp to see among the French—yet, on the whole, signs of plenty, and of easy circumstances, were also generally visible.

The morning was cloudy when we started, gradually began to rain, and at last poured so heavily that we were glad to take shelter in the house of a M. Robichout, whose farm lay on the eastern side of the Aboushagan River—a small stream about twelve miles from Shediac.

The old Frenchman had nothing very favourable to say of his countrymen. Many of them, he said, were indolent, did nothing, got into debt, and were obliged to sell their farms. The custom of dividing farms among the several children of a family prevails here to some extent, for want of energy among those children to go into the wilderness to clear new ones for themselves. But this evil is not seen as yet so visibly as in Lower Canada.

One of this old Frenchman's remarks, when speaking

of those who had of late years emigrated from the province, reminded me of what used to be said in Scotland of North America, that "it was a refuge for dyvors and broken men." Those who leave the province were, for the most part, he thought, *worse than the country they left;* and in this he was, I have no doubt, correct.

This south-eastern reminded me much of the north-eastern promontory of New Brunswick. Over the surface of both, the soils were red—often light and dry, though not unfrequently heavy and wet. This region also was level and almost flat, so that the water had little means of flowing off, and stagnated so as to form wet and swampy tracts. Woods of stunted pines and cedar swamps at times occurred, and more frequently large breadths of flat land, which, though they were capable of bearing good forest trees, were yet too wet when cleared to be submitted to profitable tillage. Arterial drainage on the large will hereafter render available here, in Botsford parish, (as in that of New Bandon, along the Bay de Chaleur,) much naturally capable land, which is at present unfit for culture; while thorough-drainage will do for many smaller tracts the same good it is every day doing at home. Open ditches and deep furrows are the only attempts, as yet, to carry off the water; and these are far from being general.

The French particularly affect light and dry soils. They succeed badly upon such as are heavy or wet. On such light lands they are settled almost everywhere in New Brunswick — in Madawaska, New Bandon, Caraquet, Shediac, and Botsford. A future generation of these people, with more industry and better instruction, must do for the heavy lands around them what it has taken so long to do for the heavy lands of England. Yet, from what I have gathered in my conversations with the habitants, they appear indifferent about edu-

cating their children. If they are to be wiser than their fathers, I fear their political superiors must compel them to adopt the means.

Two things I am reminded of by the passages of this day's ride, which have frequently struck me as somewhat peculiar in this northern region—first, the numerous fires, or "burnings out of house and home," one hears of in travelling over the country. These arise, I suppose, from the houses being so generally built of wood, from the lavish wood-fires which are kept up within them, from the dryness of hot summers like this, and from the unexpected spread of fires from the burning woods. The other is, the number of apparently idle boys who are seen almost everywhere lounging about, as if there was a want of work—a want of method on the part of those who should direct, or of willingness to work among those who ought to obey. In the absence of sufficient knowledge, it would be wrong to draw conclusions unfavourable to the people; but I think we may at least safely infer from such appearances, as I have elsewhere stated,* that a living is more easy to make here —when a man is once settled—and that the mass of the people are not obliged to work so hard as they are at home.

And yet the large extent of ploughed land we saw as we drove through this district—generally light and easily ploughed, it is true—did not speak badly as to the industry of the people. It showed at all events, that, long as the winters are, there is abundant time between the end of harvest and the setting in of the first lasting snow-storms to allow of a great deal of farm-work being done, where diligence and willing industry direct the plough.

Here, as in Nova Scotia and on the St John River, the yield of upland hay had been greatly diminished

* Vol. i. p. 119.

by the excessive drought of the season. The same land which in 1847 had yielded Mr Rubichoud 20 tons, and in 1848 10 tons, had this year yielded him only 2 tons; and though he had a larger crop of marsh-hay than usual, he would have some of his cattle to kill when winter came on. A better system of husbandry ought to enable this fine land to produce far more abundant winter food for stock, and with more certainty, than it has ever hitherto done.

From Rubichoud's we drove amid thunder and heavy rain to Shemogue, where, at Tingley's, we stopped and dined on tea, eggs, beef, potatoes, and new bread, seasoned by a good appetite. The latter enabled us to overcome the disrelish which a little absence of cleanliness would, in other circumstances, have awakened. Departing again in the rain, we proceeded only eight miles farther; and were then glad to house ourselves for the night in the farm-house of a hospitable Dumfriesshire-man, of the name of David Murray. This man had been in the country twenty-nine years; had married a kindly Blue-nose wife; had prospered meanwhile, very much to his own satisfaction, and received us "drookit craws," as he called us, very much to ours. A huge fire was speedily built up in the kitchen; in the adjoining parlour another soon blazed; our wet coats were hung up to dry; the kettle, and the potato pot, and the frying-pan, and the girdle for new bread, were all soon in requisition; and after a plentiful supper and a long talk, we found beds enough and clean, in which to spend a comfortable night.

Oct. 25. — Mr Murray's farm, on which his house stands, contains one hundred acres, of which about forty are cleared. Last year he bought another of two hundred acres, with thirty cleared, for £260 currency—about £1 sterling an acre. His two reasons for making this purchase confirmed what I have stated above, as the result of my own observation of the general character

of the land in this part of the province. First, his own uncleared land was mostly wet; and, second, the other farm contained some dry cleared land of first-rate quality. I spoke to him of draining. He did not from experience know much of its later effects with us, having been so long from his Dumfriesshire home—where he might now see many energetic and enterprising farmers benefiting themselves and their country by the practice of this means of improvement. He admitted, nevertheless, that if he had laid out the purchase money of the second, in making his first farm dry, he might have done as well for himself in the end. I saw, however, that he felt, as many do, that the easiest, speediest, and surest way of getting a few fields of dry land, was to buy it. And I thought to myself—how very many men act upon the principle, though they may never have heard the advice, of the old Northumberland farmer, who, when delivering his dying injunctions to his son, earnestly added to all the rest—"An' Johnny, gif thou wants a bit o' lan', buy't; but dinna spend thy siller i' drainin'."

The land in this neighbourhood, Mr Murray said, was excellent for wheat, and had never failed with him. He re-echoed to me what so many others had said before, that nobody who is comfortable at home should come to America. He did not think, however, that he should himself have done so well had he remained at home; and he was sure that an industrious steady man might make money in this country by farming, as he and all his connections of the name of Murray had done.

In his experience of the country also, the French on this coast, he said, by the constant cropping, and by the neglect of manures, and of the sowing of grass seeds, had fallen off in their circumstances, instead of improving them.

Along this coast, all the way from the mouth of the

Scadook River to Cape Tormentine, and round to Bay Verte, salt-marshes occur, chiefly in creeks and at the mouths of small rivers. These marsh-lands are sometimes of great extent, and have been dyked in; more frequently, however, they are undyked, liable to overflow in floods, high tides, and wet weather. The undyked are rendered drier and more valuable by the occurrence of hot dry seasons like the present. All, however, both dyked and undyked, are far from being so valuable as the marsh-lands at the head of the Bay of Fundy, of which I shall afterwards speak. When undyked, they are properly called salt-marshes, and are valued at £5; when dyked, at £8 to £10 an acre. They yield large crops of inferior hay; and it is by means of the manure which this hay produces that such of the habitants as possess marsh-land are enabled to keep their uplands from being exhausted by the system of farming which they follow. Hence, a coast farm is considered incomplete which does not possess a portion of this marsh—just as, along the river St John, a portion of intervale is considered an almost indispensable adjunct to an upland farm.

A question I had often discussed with the New Brunswick farmers was, whether a man could make money in this province by the employment of hired labour only. I had met with many negative answers to this question, but Mr Murray boldly answered it in the affirmative—provided the farmer attended to his own business, and speculated in nothing else. He instanced himself as an example. With no children old enough to help him, labouring little himself, employing hired men to work for him, he made money; and believed that the man who hired most labour, if he judiciously applied it, would make most money too.

And yet, though ahead of his French neighbours in industry and skill, he was himself far behind in the management of wet land, and in green-crop husbandry.

Only this year had he ventured upon a few rows of turnips. If, therefore, hired labour pays *him*, it ought to be still more profitable to one who knows what crops to raise as the most profitable under the circumstances in which he is placed; how to raise them most abundantly, and at least cost; when raised, how to dispose of them most skilfully and most economically in feeding stock, or otherwise; and who, like him, has at the same time industry and prudence in the management of affairs. For though it is my profession and my pleasure to diffuse knowledge, and to recommend it because of its actual money-value to the rural community, I must confess that a want of industry and prudence, as often as a want of knowledge, are with us at home the causes of want of success in farming. It is because the possession of superior knowledge by more learned farmers has been so frequently unaccompanied by the prudence in affairs which is so necessary to worldly success, that so much difficulty is found in persuading practical men of the real worth of science in the prosecution of the arts of rural life.

Labour here is paid for at the rate of 50s. a-month for the six summer, and 30s. for the six winter months, or £24 a-year, besides board and lodging. The price of wheat I did not ask, but oats sell at 1s. 6d. to 2s. a bushel, weigh from 36 to 40 lb., and yield more than *half meal* of excellent quality.

After breakfast, we walked over from Mr Murray's house about half a mile to Bear Cape, to examine the section exhibited by the cliffs on the shore. We found it to be:—

		Feet.
Drift,	Red marl and sand, .	5
	Yellow sand, and angular yellow sandstone blocks, .	10
Yellow thick-bedded sandstone, .		10
Grey silicious conglomerate with quartz pebbles, of unknown thickness.		

Thus it appeared that the red soils which had accompanied us from beyond Buctouche, gradually increasing in intensity of colour, were still a drift covering only, and that no rocks capable of producing them yet occurred thus far along the coast.

At 9 A.M. we started again on our journey towards Cape Tormentine. We passed through a country similar to that of yesterday, creeks of marsh-land occurring at times on our left, and tracts of low wet land covered with inferior timber, and in their present state of little value to agriculture, at times on our right. We saw, however, many good farms by the way, and comfortable-looking houses, many of which were occupied by Scottish families. At the Cape, we drove down to the shore, and there found the red-sandstone rocks we had been so long in quest of, as the origin of these red soils, forming the entire rocks and cliffs. They were thin-bedded, fine-grained, nearly horizontal, but with an easterly dip, slightly south. Still the dip was not very distinct; and no junction with the yellow sandstones was to be seen. It lay, doubtless, towards the extreme promontory which we had passed some miles to our left. Another day's leisure would have enabled us to find the junction, if any is visible, and thus to determine satisfactorily whether these red sandstones lie over or under the yellow sandstones of the productive coal-measures of this province. My impression at the time was, that these red rocks of Cape Tormentine overlie the yellow sandstones; and I regretted very much that the principal object of my tour prevented me from thoroughly investigating the correctness of this impression.

A glance at a map of this east coast of New Brunswick will show that the red lands, and probably the red rocks of the north-eastern and of the south-eastern promontories of the province, may once have been continuous, occupying the present site of Northumberland

Straits, and of the south-western portion of the Gulf of St Lawrence, and forming thus a continuation of the red lands and rocks of Prince Edward's Island. In fact, it is very easy to regard this island as a fragment of the ancient land which formerly extended continuously from Cape Tormentine to Miscau Point, before the Gulf of St Lawrence attained its present dimensions.

Turning west from the Cape towards the mouth of the Gaspereau River, which falls into the head of the Bay Verte, we drove over a higher tract of stony grey-sandstone country into a lower generally red district—a continuation of the red lands we had left, but of inferior quality. Here we passed through a long Irish settlement, the first half of it chiefly Protestant, the second chiefly Roman Catholic. The first part has the reputation of being the more prosperous, and such was certainly my own impression from what I saw. I fancied, however, that, on the whole, the Protestant land was the drier and the more easily worked, except in the matter of stones, which were much more abundant on many of the Protestant lots. My friend the legislator, of course, saw things with different eyes.

We stopped about the middle of the settlement to bait our horses, and, walking on in advance, I went in alone into one of the poor cabins of the Catholic Irish. The mother of the family, who was cleaning away the fragments of the potato dinner, and was hastening to help in the fields at gathering the crop, complained that "indeed they were not so thriving as they should have been, considering the time they had been in the country;" and then she added the true Irish remark, "them people had got on well enough who *had the luck*, when they arrived, to get a good lot of land."

In many places the land of these people is certainly unfavourable to first crops, and to poor first settlers, because of the heavy soils, the absolutely wet places,

and even the swampy spots which here and there occur; but there is great latent capability in the red loams of which it almost all consists, and a man who *has the luck* to be industrious and persevering will be able to establish his family well on almost any part of it.

After crossing the Gaspereau River—a small stream which expands at its mouth into wide marshes—two miles brought us to the Bay Verte Settlement, which forms quite a pretty village at the head of the bay. It is the seat of some fisheries and a little trade, and stands on high ground, overlooking and separated from the sea by extensive marshes, dyked and undyked.

Chisholm's we found a clean comfortable house, at which we were well served by his managing wife, and where we should have been well pleased had our time permitted us to stay longer. But necessity drove us on, after dinner, through rich red land, which reminded me, in apparent quality, of the richest red lands of Scotland. The country was undulating, had generally a good natural drainage, was extensively cleared, had evidently been long settled, and was parcelled out into fine farms, on which smart white-washed—sometimes fanciful and ambitious-looking—houses were to be seen. This cheerful air, together with the comfortable appearance and size of the farm-houses, accompanied us from this village of Bay Verte as far as Amherst, at the head of the Bay of Fundy—the frontier town of Nova Scotia—and thence through Sackville to Dorchester, on the River Memramcook.

On our left, as we advanced, ran the River Missiquash —here, I believe, the boundary of the province— through extensive marshes; while along the upland which skirts them stretches the settlement of Jolicur, (*Jolie cœur*,) through which we passed. This settlement consists of a succession of fine upland farms, of reddish, loamy, and sandy soils, enriched by the marsh-lands

below, a considerable tract of which is attached to each farm. Darkness came on at this period of our journey, so that we could not judge of the farming upon this good land. We stopped for the night at Henderson's, near the extremity of the settlement.

26*th*.—We were now on one of the head-branches of the Bay of Fundy, and among marsh-lands enriched by the mud with which the upper waters of this bay are loaded. A narrow neck of land, only fifteen miles in width, separates Bay Verte, on Northumberland Straits, from Cumberland Bay, which is an arm of the Bay of Fundy. This neck of land is low, not, if I am rightly informed, exceeding at its highest point 18 to 20 feet above high-water on the Bay of Fundy side. Across it, from some small marshy lakes, which stand at the highest level, flows the Missiquash, in one direction, towards the Bay of Fundy; and in the contrary direction, a small stream, which is sometimes dry in summer, towards the Bay Verte. The union of the two seas across this neck has been often projected, by canals and by railways. Projects have even been seriously entertained, and surveys made, but nothing has yet been done to carry them into effect. That such a junction would greatly benefit both the adjoining provinces, there can be no doubt; and that it will be hereafter executed, there can be as little. Perhaps, in the comparatively infant state of the district, and of those which adjoin it, any project of an independent and isolated kind is still premature. But, should the great scheme now in agitation for the formation of what has been called the *European and North American Railway*—to connect all the provinces with the railways in Maine, and with the point in Nova Scotia which lies nearest to Ireland—be carried into effect, it will pass across this isthmus, and, touching the Bay Verte, will be connected, by a short branch, with the head-waters of the Bay of

Fundy. Of this great projected line, I shall speak in a succeeding chapter.

The description I have formerly given of the original formation of the Valley of Annapolis, in Nova Scotia, applies, with a little change of names, to this low neck of land, which here forms the boundary between the two provinces. Both have been formed since the last considerable elevation of the land; both were originally narrow straits, through which the sea-waters rushed; and both, when the land was elevated, became the scene of a struggle between opposing tides, which first gradually accumulated a bank, and finally a dividing barrier, at their place of meeting. Over this first and lowest land, a broad Carriboo bog exists in the centre of the Annapolis Valley, from which flow, in opposite directions, the two streams which water it. In this locality it is covered by a marshy lake, from which runs the Missiquash River in the one direction, and a smaller stream towards the Bay Verte in the other. And these streams, as in the Annapolis Valley, flow through alluvial lands of great extent, which, around the head of Cumberland Lake, are of greater richness and fertility than on the Bay Verte side, because they are farther removed from the clear waters of the North Atlantic.

There is one striking difference, however, between the two valleys. As we proceed from Northumberland Strait towards the head of Cumberland Bay, the Main Valley, bounded on the one side by the high-lands of Nova Scotia, and on the other by those of New Brunswick, widens very much; but several long parallel rocky ridges remain, which the ancient sea had not been able to wash away—which may have been islands in it—and which now rise as long narrow lines of elevated land, varying in height and width, amid the surrounding tracts of marshy and rich alluvial soils. Between each—parallel to them and to the central Missiquash River—

flow little streams, which empty themselves, at different points, into the head of the same bay.

It thus happens that into the head of Cumberland Bay, four streams, like the four fingers of a hand, empty themselves between Sackville on the west and Amherst on the east. Along each of these streams, becoming especially wide at their mouths, stretch long bands of marsh-land, separated by the island-ridges of upland already described.

Of these ridges of upland which divide the marsh into separate portions, the loftiest is that called Cumberland Ridge. This terminates in a promontory, which forms a conspicuous object as it is seen from the waters of the bay, and which has been occupied as a place of strength (Cumberland Fort) at successive periods by the French and the English. Immediately after breakfast, we were on our way from Jolicur to this promontory—among other reasons, that we might enjoy the extensive view it affords of the Bay of Cumberland, and of the wide stretch of marsh-land, in both provinces, of which the Cumberland Ridge forms a kind of centre.

An hour's drive across the marsh, and then along the high ground, brought us to the fort. It stands at the extremity of a yellow or grey sandstone ridge, which runs, as the other elevations do, nearly south-west, separating two great divisions of the marsh-land, and terminating in a promontory before it reaches the waters of the Bay. The fort itself, now only a name for ruined buildings and crumbling walls, was built by the French, taken by the English, garrisoned by them for a time, abandoned again when peace came, and refitted for the last time in 1812, at the period of the American war. Its dismounted cannon now do the duty of gate-posts, or serve for still viler uses.

The view from the fort is not only extensive and beautiful, but economically interesting. In front, the

Cumberland Basin, with its margin of low-lands and wooded heights behind them, stretches far as the eye can reach. On either hand the wide alluvial flats and marshes, with the tiny silver streams flowing through them; and beyond these marshes, which fill the valleys, the rich high-lands apparently closing around them in the distance like a vast amphitheatre; while scattered farm-houses, long settlements, and compact villages, and grazing cattle, and hay-coils dotting the fields, and still uncarried corn, threw an air of life and industry over the whole. The name *Beau Séjour* given to the fort by the French, and of *Beau Basin* to Cumberland Basin, convey their idea of the beauty of the site, and of the view it commanded in their time.

This flat, as I afterwards saw by more particular inspection, is not all equally rich, nor treated with equal skill; but I could not look at the district without endeavouring to form an idea in my own mind of the future and possible agricultural capability of this great alluvial plain, and of the rich uplands which border it. I roughly estimated that there are upwards of two hundred thousand acres of this flat land, dyked and undyked, in the district under my eye, and spread all around the head-waters of the Cumberland Basin. Where not entirely swampy and barren, the produce varies from one to three tons of hay per acre. But take the average produce of the whole at only half-a-ton an acre, and the owners may yearly reap one hundred thousand tons of hay from these levels, supposing none of them to be in arable culture. This would feed thirty thousand head of cattle, which, if raised for beef, and killed at three years old, would supply to the markets of New Brunswick about ten thousand head of fat cattle every year.

Again, the manure produced from every ton of hay employed in this manner, together with the fertilising

action of the marsh-mud which is deposited by the tidal waters, ought—on a tolerably managed farm, producing its own manure—fully to enrich besides, and to keep in good condition, an acre of the upland which surrounds the marsh, and which is itself naturally rich and productive land. Thus a hundred thousand acres of upland ought, by the aid of the marsh, and the mud of its streams, to be yearly covered with rich crops of grain or other produce.

Wheat here is excellent, but, in the present condition of the marsh, it is liable to rust. Oats are a more certain crop. If we suppose this upland, thus manured, to produce forty bushels of oats an acre, the hundred thousand acres would yield a return of four millions of bushels, or an equally nutritive produce of potatoes, cabbage, turnips, buckwheat, barley, Indian corn, or wheat.

The oats weigh from 36 to 40 lb. a bushel, and will yield half this weight (18 to 20 lb.) of oatmeal, as much as will sustain a full-grown man for a week. The entire produce of grain or other food from the upland margin of the flat lands, aided by the manuring substances which they can contribute, should thus sustain eighty thousand full-grown men, or an average population, young and old, of a hundred thousand souls.

This roughly-calculated possible sustaining power of the district I was looking upon, struck me the more from its remarkable inconsistency with a fact which had on various occasions been communicated to me at St John—that New Brunswick does not produce a sufficiency of first-class butcher-meat for its own markets, and that its shipping is chiefly supplied with salt provisions from the United States, because the beef of the province will not stand salt. It was still more in contrast, also, with an opinion to which I have elsewhere alluded as being very prevalent in the colony,

that New Brunswick was barely able to produce food enough for its existing population, and could of itself sustain no increase of inhabitants. The limited tract before me, rightly treated, was sufficient alone to supply all the shipping, and to feed half the people now living in the province of New Brunswick.

Leaving Fort Cumberland, another hour's pleasant ride —over the marsh, the intervening Fort Lawrence Ridge, and the rivers Missiquash and La Planche — brought us to Amherst. This town, which is in the province of Nova Scotia, is beautifully situated on the slope of the high-lands which bound the marshes on the south-eastern side. Though small, it possessed the air of cheerfulness which attends all the settlements we have seen since we crossed the Gaspereau River, at the head of the Bay Verte. The taste for external decoration which is visible in the houses of the French habitants, in their more prosperous settlements, seems to have survived the old Acadian race by whom this district was originally held. Neat houses and white-washed walls, with occasional balconies and porticoes, give a pleasing character to the rural architecture of the settlements and villages which are scattered around the head-waters of the Bay of Fundy, and on the isthmus which separates them from the Gulf of St Lawrence.

South of Amherst a few miles, the rivers Hebert, Macan, and Napan fall into the Cumberland Basin; and where their united mouths open into the Basin, stands the small town of Minudie, which is accessible by a ferry-boat from the Amherst marsh. With the intention of crossing to this place, and of proceeding afterwards to the well-known cliffs called the Joggins, some miles beyond, we drove down to the ferry along some miles of beautiful upland, and then across the alluvial dyked marsh. The flat consisted of rich heavy clay, dried partially by open ditches, and mostly under

hay, but awaiting a more thorough drainage to be converted hereafter into lands as fruitful in corn as the rich carse-lands of the rivers Forth and Tay in Scotland.

On arriving at the ferry, we found the tide very low, and impassable mud occupying the greater part of the wide channel. After waiting for an hour in the hope of a rapid rise of the tide, which rushes up the Bay of Fundy with great velocity, we found that it would be impossible to cross in sufficient time to allow us to visit and inspect the Joggins without the sacrifice of another day, which our time did not admit of; we therefore retraced our steps to Amherst.

The fine, almost impalpable mud, which has formed these extensive alluvial plains, and which, when the tide is out, stretches from the cultivated banks in the form of soft impassable flats, as far as the eye can reach, is on the surface, and for some inches in depth, of a reddish tinge. Below this, however, the colour changes; and where it is completely excluded from the air, it is blue. This tinge becomes brighter and clearer as we descend; and in the absence of the tide it is seen, in the lower part of the muddy cliffs, of a beautiful bright blue tint. This change of colour arises from the de-oxidation of the iron which it contains, through the action of the organic matter, animal and vegetable, in which the clay abounds, and to which it in a great degree owes its fertility as a soil, and its fertilising qualities when laid upon other land. It is deposited by the tidal waters at the heads of creeks, in the beds of streams, and wherever these waters are permitted to reach. It is carted off by the farmers to considerable distances for application as an enriching substance, and is considered equal to one-half or two-thirds of its weight of farmyard manure.

On our way back to Amherst, we passed along the gypsum-bearing red-sandstone rocks, and visited one or

two of the localities within a short distance of our route, where cliffs of gypsum presented this mineral in exhaustless abundance.

The most striking circumstance connected with these extensive deposits of gypsum, where they occur near the surface, is the singularly undulating character they impart to the surface. Round knolls, and equally round pot-shaped hollows, perpetually occur, and give so characteristic an appearance to the district that an accustomed eye will require little else to suggest the probable presence of beds or masses of gypsum, wherever, in conjunction with reddish soils, this appearance happens to be seen. These cup-shaped hollows are sometimes of large dimensions—hundreds of feet in diameter—sometimes small enough to be leaped across; sometimes dry and covered, as the rounded edges and knolls which separate them from each other are, with a beautiful short, rich, green herbage, or with trees of various kinds in vigorous growth; sometimes filled with water of great depth, and forming even lakes of considerable size, with green islands rising from them, loaded with luxuriant broad-leaved trees. These hollows and round hills, and the general aspect of the surface, are due to the sinking down of the rain and other water at various places, where cracks or fissures in the gypsum-rock allow it to descend, and the consequent solution and washing out of the substance of the gypsum-rock itself at these places. This causes the surface to subside, and gradually to produce the large and deep hollows and the rounded knolls, still containing gypsum, which the country presents. The most striking example I have seen of this kind of appearance over a small space is in Sussex Vale, in New Brunswick. I shall describe this spot in a subsequent chapter.

After dining at Amherst, where the traveller will find a comfortable inn, we returned over the marsh-land we

had crossed in the morning towards the town of Sackville, which is distant fifteen miles.

On our way we stopped at the bridge over the La Planche, one of the small streams I have spoken of, to look at the works by which these dyked lands are drained and secured. The first thing done in drying these marshes is to erect a dyke or sea-wall, by which the ordinary tides are excluded; the next, to establish sluices at the mouths of the rivers, by which the tidal-waters shall be prevented from ascending, while the fresh-water from above shall be allowed to escape. These operations are common enough in all sea and river embankments. The interesting points to be observed here are the numerous old dykes, many of them now far inland, which are to be seen upon the plain, showing the progress of the practice of dyking from the time when it was commenced by the early Acadian settlers, and the height and strength of the sluices, called in this country *abadeaus*, by which the river-mouths are secured against the entrance of the tide. We had stopped at one of these powerful and extensive abadeaus. They are of great height, in consequence of the high elevation of 40 to 50 feet which the tide attains; and they are made of strength sufficient to withstand not only the pressure from without, but that also of the accumulating river-water within. These circumstances render the construction of an abadeau an important and expensive undertaking, and make the constructions themselves objects of pride to those who have caused them to be erected, and of interest to visitors who wish to form a correct idea of the material resources of the district, and of the energy and enterprise of its inhabitants.

Crossing the Fort Lawrence Ridge, we descended to the Missiquash River, passed it by a long wooden bridge; farther on, crossed the Cumberland Ridge; then

the Au Lac stream and marshes; next a slightly elevated upland, which separates these from the Tantamare River and its marshes; and finally, after crossing the latter, we ascended to the town of Sackville.

This town and settlement is beautifully situated on an undulating red-sandstone ridge, generally of rich soil, and affording numerous favourable building sites, of which, in the village itself, many have been judiciously selected and tastefully built upon. The settlement is some miles in length, and, towards the east and south, looks down on the broad marsh-lands—often called the Sackville Marshes—and the head-waters of the Beau Basin.

In addition to the storehouses, public buildings, and residences which the traffic, the law, the physic, and the religious duties of so fertile and comparatively populous a district require, this town of Sackville derives additional size and consequence from a large academy or college, erected some years ago by a wealthy resident merchant, and placed by him under the direction of the Methodist body, which is numerous and influential in the province. The building itself is plain and simple in its architecture; but it is large, stands in a commanding situation, and, with the houses of the professors or masters of the academy, adds greatly to the size and appearance of the town.

I had the pleasure of being conducted through the institution by one of the masters, of whom it has three, besides the Principal. It has at present but 50, in better times it had 80 pupils, who are lodged together by twos in each room, and are boarded and instructed in all the ordinary branches of education, and provided with everything but books, for £25 a-year. Certain extra classes are charged in addition; but it is provided that, in no case, including every expense, shall the annual cost exceed £80 currency. A library and collections of

minerals and of philosophical instruments, in a very creditable state of forwardness, form part of the educational apparatus of the institution. My wonder is how, in such mere outlines of countries as these North American colonies still are, so many separate institutions of a higher kind can be established and maintained, and so large a number of persons can afford to pay the comparatively high, though very reasonable, annual charge which is made for the board and education of the pupils.

At Sackville I was the more happy to avail myself of the ready hospitality of the Honourable Mr Crane, as I unexpectedly found that I had already a slight acquaintance with a member of his family, with whom I had had the pleasure of crossing the Atlantic a few months before.

Saturday, Oct. 27.—Whoever has examined the dyked lands of Holland, may have observed that their natural level declines as we leave the immediate banks of the Rhine, or of the other rivers upon which they are situated. So on the dyked low-lands of eastern Lincolnshire, the immediate coast-line is higher in level than the inner country, and the warped-lands on the Humber and the Trent are higher than the wide peaty or sandy moorlands which are frequently met with many miles from their banks.

The same is the case with the marsh and alluvial flats at the head of the Bay of Fundy. The stiff clays of the coast-line, and of the immediate banks of the rivers, decline in level as we leave the shores and the river-beds. The dryness of the soil and its value also diminish, and we advance from a firm alluvial soil to a more and more uncertain marsh, and finally find ourselves, when we are six or eight miles inland, upon an unstable and dangerous bog, the surface of which is several feet below the level of high-water in the bay. A few miles above Sackville, the rich Tantamare marsh declines into a worthless bog of this kind; and I made an

excursion this morning with Mr Crane, to look at the steps that have been taken for its improvement.

On our way, we examined several quarries of red sandstone, which are situated on the summit of the slope on which the settlement stands. The rocks dip south-east, towards the Tantamare Marsh, as the yellow or grey sandstones of the Cumberland Ridge do towards that of the Missiquash. A series of faults may probably traverse the isthmus — a circumstance which renders doubtful the apparent relative position of the yellow and red rocks which are often met with separately, though in few places in actual juxtaposition. If such faults exist, their direction may have determined the original course of the waters which covered the whole of this low country, when it was the channel of a strait joining the Gulf of St Lawrence to the Bay of Fundy. In the following section of this marsh-valley, taken across the head of Cumberland Basin, between the towns of Sackville and Amherst, I have, however, supposed the strata to be free from faults, and to be only thrown up at a considerable angle—as they are, in reality, seen to be, wherever they come to day. Between each of the rocky ridges crossed by the section there occurs a series of thinner and softer beds, which the action of the ancient sea-currents was more effectual in scooping out, and upon which, when the land was elevated, the horizontal silts of the muddy waters were deposited, to form the marsh and alluvial lands of the present day.

No. 1 in this section is the red sandstone which forms the slope on which the town of Sackville stands. Good rich open soils are formed upon this rock; and along the edge of it, skirting the marsh, there are many good farms. No. 2 I suppose to be the site of the limestone and red gypsiferous marls, which, in other parts of the province, occupy this position above the red sandstone and conglomerate. Their softness has caused them to be

scooped out, so as to form the hollow in which the Tantamare Marsh now exists.

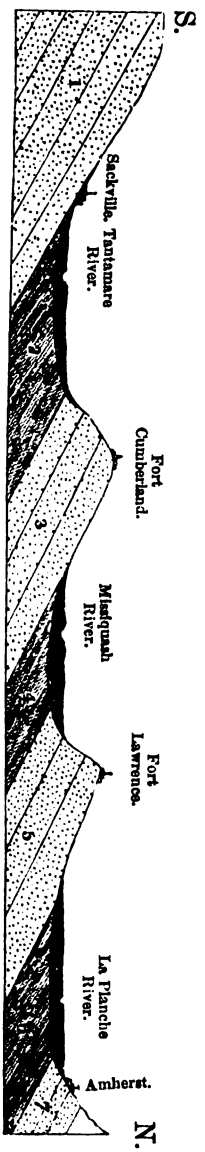
No. 3 is grey-sandstone conglomerate which very frequently overlies these gypsiferous marls, being the base of the productive coal-measures. The hardness of this rock has enabled it to withstand the action of the water, and to form the ridge on which Fort Cumberland stands.

No. 4 represents the productive coal-measures, greenish-grey, generally thin-bedded, and more or less soft sandstones, with shales and thin beds of coal which have been more easily washed away by the currents of water.

No. 5.—I am uncertain from my notes whether this is the grey sandstone and conglomerate which often underlie the upper coal-measures, or whether it is a repetition of the red sandstone of Sackville. If it be the latter, then

No. 6 is a repetition of the gypsiferous red marls of No. 2, and there exists a dislocation by which the Fort Lawrence Ridge has been thrown up. If No. 5 be a grey-sandstone conglomerate, as I am inclined to believe, then No. 6 represents the upper coal-measures—thin-bedded, soft, yellow sandstones, easily scooped out by the ancientc urrents.

No. 7 is the red sandstone, marls, and gypsum of Nos. 1 and 2, certainly



here repeated; so that, if there be no dislocation west of the Fort Lawrence Ridge, there must be one somewhere in the valley of the La Planche.

This section presents in miniature—if the dislocation be in the La Planche marsh—a view of the geological formation of a very large portion of the surface of New Brunswick, as will be more clearly shown in a subsequent chapter. It is in the hollows formed by the ancient sea-channels that the muddy waters have deposited the sedimentary matter which now forms the basis of these broad and fertile marsh-lands.

I was much pleased with a short visit we paid in passing to a Mr Morris, an old settler from Aberdeen, who, like nearly all the other Aberdeenshire men I have met in North America, appears to have prospered here very much. He has been upwards of thirty years in the country, and, being an ingenious man, owns and works mills for carding and fulling, for grinding flour, oatmeal, and buckwheat, for making pot-barley, and for sawing timber. He is also a maker of carding-machines, and a farmer to a considerable extent. I saw near his house one of the finest fields of turnips I have met with since I left the Miramichi River. His opinion was, that good farmers, who are themselves industrious men, may safely come to, and would succeed in this country, and that what the province wants is a class of farmers who know how to make the most of the land. He did not mean *take the most out of it*, for this kind of farming the present landholders over all North America understand and practise, to the almost total exclusion of everything else.

Of all his milling operations, the grinding of buckwheat interested me most, as I had never seen this grain in the mill before. I was struck with the cleanness of the husk taken off from so small a grain, and with the perfect separation which seemed to take place between it and the white kernel within.

I have mentioned, I believe, in a previous chapter, that two species of buckwheat are cultivated in this province—more distinct, of course, as species are, than the varieties we usually meet with among cultivated grains. The first is the old or smooth-seeded, *Polygonum fagopyrum*, which has a white flower. The grain of this kind can be ground with close stones, and shells very easily and completely. It weighs 48 to 56 lb., and yields about 36 lb. of flour per bushel. The second, called here the new, Canada, rough, or curly-grained, is the *P. tartaricum*. Its seed is rough and wrinkled; it has a green flower, is here considered more prolific, and a surer crop, because less liable to be injured by early frosts. It must be ground with *wide* stones, and yields only 18 lb. of fine flour from the bushel. But the flour is whiter; and, to compensate for the smallness of the quantity of flour, it yields double the quantity of nutritious bran, which, for feeding pigs, is considered superior to oatmeal. It is an objection to all varieties of buckwheat, that it is very apt to shed its seed in windy weather. It was stated to me here, as an additional recommendation of this early-seeded variety, that it sheds its seed so much that, if the ground be merely ploughed up, it will give a second crop without sowing! I suppose it is the same species which is sown in Siberia, and along the banks of the Wolga, and which there yields five or six successive crops after one sowing. But there, as in Brittany, the people are miserably poor.

A few miles beyond the mills, we came upon the edge of the soft moss. I found it like a real Scotch or Irish bog, through and beneath which an incautious man might readily disappear. Like our green Scotch and English mosses, it was composed chiefly of sphagnum; but, instead of heath, it bore on the drier tufts the small very heath-like crowberry, *Empetrum*, and the larger rhodora, *R. canadensis*, and narrow-leaved American laurel, *Kal-*

mia angustifolia. Spongy and full of water, the bog did not to the eye appear lower in level than the adjoining solid land. It was really so, however, or speedily became so, when means were taken to allow the superfluous water to escape.

The mode of improving this bog, though not so artistically, skilfully, and expensively carried out as upon the moorlands, to which the muddy waters of the Trent are conveyed, around and behind the Island of Axholme, is based upon the same principle. Canals are cut backwards into the bog from the nearest point to which the tide-waters come, and from these canals cross ditches are led into the bog on either side. The tide-water ascends the canal, overflows every part which is beneath its own level, deposits its suspended mud, and then retires, to return next tide with a fresh supply. This coating of mud, as it accumulates, weighs down the spongy moss, squeezes out the water, lowers its natural level, and, by thus causing it to sink, enables the successive tides of months or years to flow over it, till one or two feet of the rich alluvial deposit have been laid on its surface, or till the proprietor of the land thinks it fit to be finally dyked in, and submitted to permanent cultivation.

Meanwhile, those parts of the bog over which, from their higher level, the first tides were unable to spread, being gradually relieved of their superfluous water, through the action of the cross ditches cut into them, are sinking also—as they are known to do in our own fenny districts at home—and gradually allowing the higher tides to flood them. The deposits, thus laid on —occasionally and by spring-tides at first—hasten the sinking by their weight; and thus by degrees the whole region, as far as the canals and ditches are carried, obtains the benefit of the fertilising action of the muddy waters.

It is a beautiful aid which nature lends to industrial operations like this, that the waters of the sea or bay

from which the tides rush up into rivers or artificial channels, when they are not kept back by too many obstacles, will rise higher at the end of their course than the actual level of the sea itself. The body of moving water entering a wider mouth, if it keep on its course, must heap itself up as its channel becomes narrower, and thus may be made the means of bearing the elements of fertility upwards, and spreading them over surfaces which are already higher in level than the sea from which they come. Of such a heaping up—due in part, probably, to this cause—I have already mentioned an example in the height to which the tidal waters rise at the Bend on the River Petitcodiac.*

I found two successful canals in operation, one called Toler's, the other Botsford's, after the enterprising gentlemen through whose means they were severally executed. The section of these canals showed that the bog rested, as we so often see it elsewhere, upon an older deposit of alluvial clay, so that, when the improvement is completed, it will exhibit a bed of peat between two similar beds of consolidated silt.

An obstacle which, in operations of this kind, is not always easy to be guarded against, is the tendency of the canals and ditches themselves to become silted up. In regard to the lateral ditches, this can only be prevented by the occasional expenditure of manual labour in clearing them out; but the main channels are kept clear by turning a stream of water into them from above. Fortunately, two fresh-water lakes above the head of the Tantamare Marsh afford a body of water which, following the retreating tide, descends with much velocity, and scours out the mud from the main canals.

The richness of the land thus made does not exceed that of our own warp-lands at home. Some of it, dyked a hundred years ago, and since cut every year for hay,

* Vol. i. p. 116.

which has always been carried off without any return, still yields two tons of hay an acre.

Cole's Island is a patch of rich upland, eighty acres in extent, which rises in the middle of the Tantamare Marsh, towards its lower part. It is held by six proprietors, each of whom owns also a large tract of the adjoining marsh, and who, having no use for, or being unaccustomed to employ, the manure made by the consumption of their hay, sell it to the adjoining farmers at 1s. 6d. a load. The mud itself is valued at 1s. a load.

I have said so much of these marsh-lands and operations, not because there is much novelty in them, to us in England, or anything to be brought in competition with our own home operations in Lincolnshire and the adjoining counties, with the persevering efforts of the indomitable Dutch in Holland, or with the felicitous *colmata* drainages of the Val di Chiana in Tuscany—but because of the interest which attaches to any attempts at such methods of improvement in a new country like this, where the population is still scanty, capital not abundant, climate in winter severe, and markets not very accessible, and because these attempts are highly creditable to the province itself in which they have been made.

After returning from my tour of the marshes, and from the inspection of Mr Crane's own farm, I started for Dorchester. I went some miles out of my way to visit the farm of Judge Botsford, the originator of one of the canals I have spoken of, and the owner of about two hundred acres of the marsh-land. I had not, however, the pleasure of finding him at home, though I afterwards, at St John, had an opportunity of making his acquaintance.

On fairly getting behind the red-sandstone ridge on which Sackville stands, we came upon poor, stony, indifferent land, resting upon grey sandstone dipping towards the marshes, and thus *apparently* beneath the red sand-

stones of Sackville. We passed several such ridges of grey sandstone, and of poor stony soils resting on them, for the most part in a state of wilderness. The town of Dorchester, which looks down upon the Memramcook River, stands upon the last of these ridges. The rocks of grey conglomerate, with quartz and other pebbles, come boldly to day, dipping also at a high angle towards the east (?) and forming the foundations of the houses of the town. In front of us, as we crowned this ridge, lay far below the broad river Memramcook and its bordering marshes, stretching far up its banks; beyond the river, the wooded high-land which separates this stream from the Petitcodiac; and a couple of miles to our left, or downwards, the wide confluence of the waters of these two important rivers, forming together the head of Shepody Bay.

Dorchester is a pretty village, and is prettily situated. I could have enjoyed a day's repose there very much. But there were too many kind friends pressing attentions upon me to admit of quiet, had I remained. I drove down, therefore, without delay to a ferry which crosses the head of Shepody Bay, a couple of miles below Dorchester. High-water at 9 P.M. enabled me to get over before it was too late to find quarters. The night was favourable, the wind being light, the moon bright, and the waters comparatively smooth. The tide runs here at the rate of six miles an hour, and, in blowing weather, the passage is often rough. At high-water the ferry is three miles wide. At low-water, broad bands of mud are left on either shore, and the channel below the confluence of the two rivers is diminished to a single mile.

I reached my quarters in Albert County soon after ten o'clock, and felt relieved at being once more alone, which I had not been since I emerged from the Canadian forests of Gaspé; and I rejoiced in the prospect of spending a quiet Sunday by myself.

CHAPTER XVIII.

Coal of the Memramcook River.—Hopewell.—Shepody Bay.—Its scenery and marsh-lands.—Produce and market-price of this land.—Caves in the red-sandstone conglomerate.—High cliffs of gypsum.—Little value placed upon them.—Export to the United States.—Mineral bitumen.—Valuable bed of it among the coal-measures.—Use of the pitch of Trinidad in the manufacture of gas.—Origin of this bitumen.—Conglomerate hills.—Shepody Marshes.—Shad-fishery followed by the farmers.—Fisheries of the Bay de Chaleur.—Maple-sugar manufacture.—Evils of lumbering here.—Comparative profit of oxen and horses in farm-labour.—It is a question of mixed labour.—Mixed teams.—New Horton Settlement.—Worst farming on the best land.—Green swampy valley.—Thin seam of coal.—Prospects of coal in New Brunswick.—Influence of the mists of the bay in rusting the wheat.—Annexation feeling on Shepody Bay.—Influence of traditionary recollections on the descendants of the American loyalists.—Popular complaints no measure of popular grievances.—Marsh-lands of the Petitcodiac.—French Acadians on the Memramcook.—Their Dutch successors on the Petitcodiac.—Dutch names.—Poorer land of the poorer Irish.—Land-speculators, their influence in causing emigration fevers.—Poor, flat, grey-sandstone country south of the Petitcodiac.—Windfalls breaking the wires of the electric telegraph.—Butternut Ridge.—Relation of the soils to the geological structure.—Miserable quarters.

Monday, *Oct.* 29.—On our arrival in this quarter, we learned that, four miles above Dorchester, on the Memramcook River, a bed of so-called coal, 4½ feet in thickness, had recently been worked into, and a considerable quantity brought to day. As this was the thickest and most promising bed of combustible substance we had yet met with in the province, Dr Robb, one of my travelling

companions, visited the mine and brought specimens of the coal. It was exceedingly hard, tough, and difficult to break, burnt with flame, but left a white ash as bulky as itself. On examination, I found it to be only a bituminous shale, consisting of many thin layers of fine silt, thoroughly impregnated with bitumen, to which it probably owed its toughness.

On subsequently visiting the gas-works at St John, I was informed that it had been tried there for the manufacture of gas, but was pronounced to be worthless for the purpose. Newcastle caking coal, and the Scotch and Wigan cannel coal, yield from 8000 to 12,000 cubic feet of gas per ton; but this Memramcook coal was said to give only 1000 cubic feet. The coke left by it, also, from the large amount of earthy matter it contained, was of no economical value.

Since my return home, I have examined some of this coal, and find that it leaves 49 per cent of ash — a quantity sufficient to make it inapplicable to the greater number of economical purposes. But it gave me also at the rate of 7000 cubic feet of gas from the ton. I infer, from these results, that the quality of this bed of pseudo-coal varies. That which I have examined is far from being worthless. It may be used in smithy forges and for domestic purposes — while it is not unlikely that portions of this, or of other similar beds may be found, which will be still richer in bituminous matter, and admit of more extended useful applications.*

Hopewell, where I landed on Saturday night, has a court-house standing by itself, and two or three other houses scattered about, in one of which I obtained quarters. It may be called the county town, because, for convenience of access, it has lately been selected as the best locality for holding the courts; but the town

* Vol. ii. p. 98.

has yet to be built. Albert is a picturesque county, however, has considerable agricultural capabilities, and a source of wealth in the shad-fisheries of the bay, which will ultimately secure a respectable degree of prosperity and importance to the seat of its county administration.

Shepody Bay, as well as the two rivers which fall into it, is skirted along its shores, wherever the coast is less bold, by marshed lands dyked and undyked. As in the Sackville district, these low-lands form most valuable additions to the upland farms; and the sea-mud, as on the Cumberland Basin, is largely employed by the farmers.

The surface of Albert County is broken by ridges and low mountains, which impart to its scenery a varied, and in many places an exceedingly picturesque character. In the neighbourhood of Shepody Bay, it consists of a series of somewhat elevated ridges, having an approach to parallelism, and a general northerly direction. Between these ridges are low hollows, swamps and marshes; while the summits of the ridges are often stony, and scarcely susceptible of cultivation. The rocks consist of the grey and greenish-grey sandstones of the coal-measures, and of red sandstones, marls, and conglomerates, with beds and cliffs of gypsum. The former of these rocks give rise to stony and sandy soils, which are poor; and the latter to rich red uplands, of excellent quality and capabilities. Where these red lands adjoin the dyked marshes, the most fertile and desirable farms are found.

The marsh-lands on Shepody Bay sell at £8 to £10 an acre, and the best red upland at £6. In selling a whole farm, the marsh-land would probably be valued at £8, the most improved upland at £6, the less improved at £4, and that which is still in wilderness at £2 an acre. Above the bay on the Petitcodiac River, the marshes are valued at £10 to £15 an acre. They

yield on an average two tons of hay, which is cut and made at 5s. a ton, and may be sold on the field at 30s. a ton, leaving a clear profit upon the land of 50s. an acre. Nothing is done to marsh-land, except cutting the crop; and thus, at £15 an acre, it appears to be a good investment for money, and attended with little trouble. But marsh-land almost always forms the smallest part of a farm, and is rarely sold separately. When the crop upon it begins sensibly to diminish, the dykes are opened for a few days, and the tides are allowed to enter and renovate the land by a thin deposit, such as the Nile in its annual floods spreads over the Delta of Egypt. In some localities, this manuring operation is performed every seven or eight years.

A couple of miles below the ferry, on the west side of the bay, high cliffs run along the shore for more than a mile, against which, when the tide is full, the waves rise to a considerable height. I took advantage of the low water, when a broad margin of mud separated the sea from the rocks, to walk along the shore beneath the cliff, as far as Cape Demoiselles. The cliff is composed of successive beds of red sandstone conglomerate, containing pebbles of all sizes, rounded in various degrees, and consisting chiefly of fragments of igneous and metamorphic rocks. It attains in some places a height of one hundred feet, and is cut into caves of all forms and sizes, and into blocks, and pillars, and coves, of a most interesting and pleasing variety. I regretted that fear of the approaching tide, which might easily have closed around me beneath these inaccessible rocks, compelled me to hurry along where I would gladly have lingered. The rocks dipped up, and towards the bay (north-east;) while the red cliffs on the opposite shore, as seen across the bay, appeared to dip north-west. The whole of this country is very much disturbed and tossed about, so as to give rise to much difficulty in determining the true order

of sequence among the red and grey rocks of which its surface consists.

Red marls, with vast deposits of gypsum, occur within a few miles of the shores of the bay. Dr Robb, at my request, ascended the stream which falls into the bay at Cape Desmoiselles for ten or twelve miles, and there found cliffs of gypsum eighty to a hundred feet high. It will surprise some of my readers, perhaps—while it will give them an idea of the abundance of this mineral substance, and the small estimation in which it is consequently held—to learn, that the owner of one of the farms in which these cliffs occur was said to have sold the right of working, or his interest in the future mines of gypsum on his own land, for a barrel of flour! One of the purest white deposits of gypsum known in this neighbourhood is the property of a Yankee, who exports it to Eastport in Maine, there burns and crushes it, packs it into casks, and transmits it to the more southern States, and even back again to New Brunswick, whence the raw material is derived. The shipment to, and manufacture in Maine, is for the purpose of avoiding the heavy duty upon manufactured articles in the United States.

An unexpected substance found in the vicinity of these gypsum-beds was presented to Dr Robb by a farmer, who turned it up with his plough. It consisted of large brilliant fragments of solid bitumen, which were brittle, easily cut with a knife, softened and swelled in a close tube over a lamp, but did not perfectly melt, though they yielded a thick dark-coloured oil by distillation. This bitumen, partially dissolved in oil of turpentine, burned readily and with a smoky flame, leaving only one-eighth of a per cent of ash. Distilled in a close retort, it left about forty per cent of a light spongy coke, and yielded at the rate of 15,000 cubic feet of gas per ton. It may, therefore, be used with advantage for the manufacture of gas.

This substance was said to occur in a thick bed in the bottom of the brook; but Dr Robb had not an opportunity of seeing it *in situ*. Since my visit, however, the bed has actually been discovered by parties who propose to work it. Its thickness is stated to be about four feet. Should this prove to be a regular bed of bitumen, and not a mere local nest, it will be a valuable acquisition to the colony; for though it may not be possible to use it alone for fuel, yet, it would materially aid the quick getting up of steam where coal is employed. Especially, it may facilitate the economical use of anthracite coal in the railway locomotives—an object of much importance in our own Wales, which possesses a large store of this variety of coal; but one of especial interest in the United States, where the deposits of anthracite are so vast and so easily accessible. Besides other incidental uses, it may be of great value also for the manufacture of gas, and may render the province, in this respect, independent of every other country.

In connection with these two economical objects, I may advert to the possibility of exporting and employing some of the forms of bitumen, which occur so abundantly in the pitch-lake of Trinidad. Those who are interested in our West India steamers could easily ascertain how far it would be possible to collect, and economically stow, the more hard and solid forms of this bitumen; and, by experiment, determine whether a saving might not be effected by the partial use of it in these boats. Dr Gessner of Nova Scotia has recently secured a patent in the provinces, for a form of retort adapted to the manufacture of gas from the pitch of Trinidad; from which circumstance I infer that he considers it possible to import and manufacture gas from this substance, in Nova Scotia and New Brunswick, cheaper than it can be made from the bituminous coal

of the former country, or from the Cannel coal of England.

The occurrence of a bed of bitumen in a coal-field is, however, a very remarkable circumstance, and is especially difficult to account for in a country which is not as yet known to contain any large seams of coal. Above the enormous anthracite deposits of Pennsylvania, from which, in some remote period, vast quantities of bituminous matter must have been distilled, we should not have wondered to find such a bed as this of New Brunswick. Will its occurrence in this locality justify us in supposing that such beds of anthracite actually exist below it?

I have mentioned the existence of a bed of hard highly bituminous shale, containing fragments of bitumen, which is worked as a coal in the neighbourhood of Dorchester. It is possible that this pure bitumen may be connected with that layer of bituminous shale, and may even graduate into it.

From my inn at Hopewell, I made an excursion of twenty miles towards the mouth of the bay, as far as Cape Enrage. After two miles of indifferent grey-sandstone soils, we came upon red land, which, with occasional intervals, extended almost to the cape. Shepody Mountain appeared as a striking object on the right. The red-sandstone conglomerate dipped under it, and the same formation appeared to predominate as far in advance of us as the eye could reach, forming long bold rounded ridges and hills, the summits and general appearance of which reminded me of the conglomerate hills of Monmouthshire.

Eight or ten miles brought us to the mouth of Shepody River, which rises in a low marshy lake among these hills, and empties itself into Haw-haw Bay. Around this bay, and on the banks of the river, there are upwards of twenty square miles of marsh-land. That which is next the sea, being undyked and liable to overflow, is

less valuable; the inner dyked part is the most valuable. At the head of the bay, however, and at a distance from the stream, it is almost worthless, being little better than a pure bog; as is the case with the upper part of the Sackville marshes, which I have already described. But here, as in that locality, the means of improvement are at hand. The muddy waters of the bay will overlay the sphagnum swamp with rich alluvial mud, whenever canals shall be cut to allow the tidal current to ascend and spread over it.

Many of the farmers on the bay employ the season between the sowing of their grain and the cutting of their hay in fishing for shad, *Alosa præstabilis*. This rich and highly-esteemed fish, unlike most others of the same genus, comes from the southern coasts of America to spawn in the northern rivers—being caught at Charleston in South Carolina in January and February; in the Hudson (New York State) in the end of March and beginning of April; in Massachusetts in May, and arriving at the head of the Bay of Fundy in the month of June. This year the *take* has been good, and the farmers have caught on an average about twenty-five barrels each, worth from five to seven dollars a barrel.

Fish of various kinds are exceedingly plentiful, along the east coast of New Brunswick, in many of its bays, and in the mouths of its rivers. The largest fisheries are established on the north-east coast, at the mouth of the Bay de Chaleur, where many of the French families are employed in them. As on our Irish coasts, however, this source of wealth has hitherto been much neglected in New Brunswick; and the Provincial Legislature have tried various means of encouraging the prosecution of the fisheries on a more extensive and systematic scale. As population and capital increase in the colony, their efforts will doubtless be followed by gradually increasing success.

The wild lands of this county abound in maple-trees, and the manufacture of sugar is another branch of industry which is prosecuted by many, as subsidiary to their farming operations. The sap of this tree, as I have already said, begins to flow before the ground is naked enough of snow for field-operations. The season commences here on the 20th of March. The practice is much the same as I have already described in Lower Canada. Two men go into the woods with three or four kettles. They will tap 800 to 1000 trees, and will make 1000 to 1200 lb. of sugar, for which there is a ready sale at 5d. per lb.—4d. sterling. The natives prefer it to the West India sugar; and, from my own experience, I should say, that those who have accustomed themselves to its agreeable flavour will scarcely relish the comparatively tasteless sugar of the sugar-cane countries.

The structure of Albert County is peculiarly favourable to the prosecution of another branch of business, that of lumbering, to which I have already many times alluded, as by no means so consistent with the simultaneous pursuit of profitable farming. The hilly nature of the surface gives rise to numerous streams and waterfalls, which have proved only so many temptations to the proprietors to erect saw-mills, and to embark in the lumber-trade for the purpose of keeping these mills employed. The consequence has been that, while all unite in saying that a man may here make money by farming, if he attends to nothing else, it is, nevertheless, the fact that a very large proportion of the farmers are in difficulties from the failure of the trade in lumber. To a great many parts of this province it will be a lucky day when the woods shall be so far robbed of valuable timber as to hold out no promise of gain to those unsteady farmers who shall engage in cutting or in conveying it to market.

It is an unsettled question among the farmers of New Brunswick, and of New England also, whether, with their long winters, it is more profitable to do their farm-work with oxen or with horses. The general arguments in favour of oxen are, that cattle are more cheaply kept during the winter, and that, when they have served a certain number of years, they can be fatted off and sold to the butcher without any loss of capital. That reason and experience have still something to advance in favour of oxen, even in Great Britain, we may infer from their use in ploughing and for draught in places so far remote as Sussex in the south of England, and Aberdeenshire in the north of Scotland.

Where human labour is dear, however, and quick work is therefore desirable, the question is no longer merely whether the horse or the ox taken alone does most in return for his keep and cost, but whether the pair of oxen and the man together are as economical as the pair of horses and the man who works with them. In the former case, the speed of the man, whose wages are high, is regulated by that of the slow oxen; in the latter, by that of the quick horses—and the slow or quick pace he acquires in following his cattle will accompany him in all his other operations. Were the question to be considered in this way, as one of mixed labour, I believe farmers would have less difficulty in regard to the adoption of horses than many, both in Europe and America, now profess to feel.

I have been led to make these remarks in this place from the very ludicrous combinations, or mixture of motive power, which I saw in my excursion along Shepody Bay. On the road, teams of four oxen and two horses yoked together to the same waggon of hay, or load of marsh-mud, were not infrequent; and, in the fields, two oxen and one horse, with a boy to drive and a man to hold the plough. A second horse, in place of

the two oxen and the boy, would certainly have cost less, and would have enabled the man and the other horse to go over nearly double the extent of ground. I know that a foreigner will find as great incongruities, and almost as frequent a waste of strength, upon our English fields in some counties; but we must not compare ourselves with others with the view of finding in their faults an excuse for our own. In England and Scotland we are gradually advancing; and those who refuse to follow in improvement are, sooner or later, compelled by circumstances to give up their farms in favour of those who are willing to go forward. And, as I have elsewhere remarked, these obstinate men, in very many cases, transport their old practices with their grievances beyond the Atlantic, and have there established and taught, and still practise, the older methods, which had failed to succeed at home.

Crossing Shepody River, we passed through New Horton Settlement, beautifully situated along the southern side of Haw-haw Bay. Along the sea-level, it enjoys the benefit of rich marsh-lands; and, on the slopes, of warm fertile soils formed from the red gypsiferous marls. In its gardens, orchards, artificially-planted trees, commodious, large, conspicuously-whitened houses, and extensively-cleared land, it had a character of age and completeness about it that is very agreeable to the Old World traveller in youthful regions like this.

From Horton and Annapolis in Nova Scotia, many settlers have established themselves on Shepody Bay. I suppose this settlement of New Horton has been established and named by them; and it certainly deserves the name, both because of the rich marshes it possesses, and because of the rich red upland upon which the farm-houses are situated and arable culture is carried on. It has been often observed, however, and in many countries, that most skill and industry are exhibited where the land

is less naturally productive. This Shepody district illustrates the value of *some* such natural stimulus, as I was informed that the worst farming was here to be seen on the best land.

Ascending from New Horton, we drove along the ridge which forms the sea-wall, as far as Cape Enrage. As we advanced, we came upon hard grey sandstones, inclined at a very high angle, and forming, probably, the cliffs at the Cape, which I had not the opportunity of examining. Turning to the right, before we arrived at the end of the peninsula, we descended into a deep narrow valley, by which this ridge is separated from the next adjoining and nearly parallel one. On reaching the bottom, we came upon a bridge by which the water and swamp was to be crossed, and where the scene was very striking. A long narrow ravine, like a broad green lane or alley, ran on our right in a nearly straight line, far towards the north-east. On our left, its course was more curved towards the sea. On the surface of this green alley not a tree or shrub was to be seen; but, down the middle, moving water was visible, slowly descending. It was the lively green and treeless surface that gave its striking character to this spot; for, on either side, the rapid slopes that hemmed it in were densely clothed with native forest. A treacherous sphagnum swamp filled the narrow green valley from side to side. Nature was in the act of converting into a boggy marsh what had recently been a shallow lake. It presented an extreme case of what is often seen in the swampy hollows that intervene between the nearly parallel ridges of sandstone in this county of Albert, and between those of metamorphic slate along the St Lawrence in Lower Canada. In old-settled countries, such natural appearances are not often seen. The hand of man has felled the forest and drained the swamp, which give to such places, in their natural state, their wild and peculiar features.

Crossing another ridge, we descended upon thin-bedded greenish-grey and grey sandstones, among which, at Richardson's saw-mills, a bed of coal had been discovered, which I was anxious to see. We alighted, therefore, and walked half-a-mile to the mill, where, in the vertical banks of the brook, after its escape from the mill, I dug into a bed of coal eight or nine inches thick. It was a bituminous coal, soft and crumbly, but probably harder within; was embedded between several feet of shale on each side, beyond which were alternations of grey sandstones and shales. It dipped at a high angle towards the south and east. This coal is in itself of no importance, but it may serve as a guide in the search for other more valuable beds, if such are indeed to be hoped for in this part of New Brunswick.

This doubt is suggested by the facts which have been published by Dr Gessner, Mr Dawson, and Sir Charles Lyell, regarding the coal-field of the adjoining province of Nova Scotia. This coal-field, in its northern and most productive part, extends about 100 miles from Pictou on the eastern, to Cumberland Basin on the western side of the province. It forms a narrow belt of about ten miles in width; and the productive measures, where a section of the whole is seen on Cumberland Basin, are only about 1000 feet in thickness. There are many seams of coal of various thicknesses, nineteen being seen in the section I have referred to. Now, the point of greatest economical importance is this, that while at Pictou the most valuable known bed has a thickness of about forty feet, the thickest at the south Joggins on Cumberland Basin, where the nineteen are all seen, is only four feet. If the field be generally continuous, therefore, as it is supposed to be, between the two extremes, the beds must thin off towards the west, so that a bed which is forty feet at Pictou is reduced to four feet at the Joggins. But this part of

Albert County, and, indeed, the whole of New Brunswick, are still farther to the west; the probability is, therefore, that a bed so thick even as four feet is not to be expected in this province.

Upon the river Macan, about fifteen miles to the east of the south Joggins, on Cumberland Basin, Dr Gessner states that a bed of coal exists, of good quality, and of ten feet in thickness.* If this be so, it would appear that, in these fifteen miles, a ten-feet seam on the Macan had thinned out to four feet almost at the Joggins, since there are none thicker there when all are supposed to be seen. If this rapid rate of thinning continue, the nine-inch seam at Richardson's mill may be the continuation of the four-feet seam of the Joggins, and no larger seams are to be looked for in that locality.

Probable, or even possible deductions, such as this, though of purely theoretical interest to the traveller or foreigner, become of vast economical importance to the inhabitants of the province of New Brunswick. If they are hereafter to find no thick seams of coal, where are all their dreams of future mining wealth and of prosperous manufactures? It is fortunate that, as experience in other countries shows, beds which thin out may thicken again, or that new beds may appear towards the west; so that, while caution and patient examination are inculcated, all hope is not entirely extinguished by such facts as are given above.†

From Richardson's mill we drove over grey and greenish-grey rocks for a short distance, when we came again upon red rocks, which form the coast-line along Salisbury Cove, and thence for a great distance west-

* *Industrial Resources of Nova Scotia*, p. 241.

† Since my return home, I have been informed by letter that a four-feet seam has been discovered on the New Brunswick side of the Cumberland Basin, and is in course of being worked. From the disturbed state of the rocks, however, I doubt its being either very horizontal or continuous over a very large area.

ward, on the north shore of the Bay of Fundy. We were now to the west of Cape Enrage, and enjoyed an uninterrupted view over the muddy waters of the Bay of Fundy, and across the bay to the western termination of the Cobequid mountains of Nova Scotia. Descending to the shore, the two horns of the cove were seen to consist of red sandstones and marls, dipping on the eastern side south-east, and on the western south-west; while between them was an interval of a quarter of a mile of grey sandstone drift, forming a cliff thirty or forty feet high, and apparently filling up one of the deep gulley-like valleys which so often separate the rocky ridges of this country from one another.

Mists prevail from May to October, and are injurious to the crops as far up as the head of Shepody Bay; but around Salisbury Cove they are more hurtful than in any other part of the country. In July and August the mischief to the wheat-crops is the greatest, the united action of the moisture and of the great heat of these months being most productive of rust.

We returned along the western side of the Shepody River, through a picturesque but poorer country, with occasional good farms and settlements; and, lingering on the rich land between the mouth of this river and Shepody Mountain, we regained our inn at Hopewell soon after nightfall.

I suppose it is owing in some degree to the frequent intercourse with the United States which the inhabitants of this upper part of the Bay of Fundy maintain, through their plaster, their grindstones, and their fish, that I found the sense of imaginary grievances arising from English connection more strong, and the Annexation feeling warmer, about Sackville, and on Shepody Bay, than in almost any other part of the province I had yet visited. I had found it so also at Annapolis, in Nova Scotia, towards the mouth of this same Bay of Fundy—

it may be, for a similar reason. I had not observed much feeling on the subject throughout the province generally; and, if the population were polled, a very large majority, I think, would vote against any proposal to disturb the British connection.

As another reason, it was alleged to me by a retired Judge of the Supreme Court, himself sprung from an American loyalist, that old recollections—the traditions and narratives of their fathers—had an influence upon the descendants of those who, at the close of the American war, left the States, and settled on lands assigned to them in this quarter by the British Government. Tales of happier lives spent in the old colonies, of which the dark days are forgotten, and of possessions which memory represented to old men in brighter colours, have created in the minds of the sons and grandsons an impression in favour of the United States, which is different in kind and in extent, as well as in origin, from that which is entertained by the sons of the original home-settlers in the province. One can imagine, indeed, that upon some minds sentiment may thus sway the reason, and lead sons to desire what their fathers have regretted — forgetting their fathers' loyalty, and inheriting only their regrets.

Oct. 3.—Another more direct and personal cause, however, has brought these sentiments into play. The failure of the wheat and potato crops for a series of years has awakened dissatisfaction, and made the farmers see causes of complaint where they had never thought of looking for them before. All the crops, with the exception of the hay, have been good in Albert County this year; and another good season, as one of the county members observed to me yesterday, would amazingly improve the character of the Provincial Legislature in the eyes of the rural population.*

* Such a good season they have had in 1850; and abundance, it is to be hoped, has brought with it thankful satisfaction and political content.

The gentleman to whom I was indebted for conducting me the first twenty miles on my journey to-day, illustrated to me another source of the discontent of his own neighbourhood: "Most of us have burned our fingers in lumbering. We have each our own small mill, on our own small creek, and saw the lumber we cut upon our own farms. On the faith of this trade we have lived dashingly, spent our money, and even contracted debt, instead of laying by in good times. And now, when times are bad, we blame the law-makers instead of our own imprudence. I have suffered in this way; and though I am not ruined, yet if I had stuck to my farm alone, I should have been better off to-day." But it is so always, and in every country. The relative loudness of popular complaints is by no means a criterion of the intensity of the popular grievances.

I left my landlord Colquhoun in Hopewell early this morning, to cross Albert County in a north-westerly direction. Four miles of poor grey-sandstone soils brought me to the village of Hillsborough, which stands on the rising ground above the right bank of the Petitcodiac, and has extensive flats of dyked marsh below it, which are valued at £7 to £15 an acre. Up this river for thirty miles, rich marsh-lands of greater or less width occur; and these, with a border of fertile red upland, give a succession of farms of very superior quality.

The Acadian French first occupied this rich tract of country, and on the peninsula between the Petitcodiac and the Memramcook Rivers they still hold much land, and are said to be an improving body of people. Many of them are leaseholders upon the De Barre property, an old grant of the times of the French. I heard much in praise of the wise energy and of the lessons in improvement given them by their old priest, who had recently died. There are few races of men among

whom an instructed priest will find more opportunity of promoting the material as well as spiritual good of his flock, than among the French Acadians, all the way from Montreal in Canada to Yarmouth in Nova Scotia.

The French on the Petitcodiac were succeeded by Dutch from Pennsylvania; and among the marsh-lands of this river, and its estuary, this people found as congenial a settlement as my Aberdeen friend on the rocky shore of the Bay de Chaleur, or the veteran Sullivan beside his black bog in Caraquet. And though intermarriages, indiscretion, and misfortune have now removed many of the best farms from the possession of the families of pure Dutch descent, yet the features and the prevailing names—Steeves, Trites, Sherman, Lutz, Recker, Beck—tell how much of the blood of Holland flows in the veins of these Hillsborough farmers. The name of Steeves predominates in the churchyard. A union of the Steeves clan can still carry the day in contested affairs, local or political; and the name is represented in the Provincial Legislature by the head of one of its oldest houses. I had the pleasure of his society yesterday, on my visit to Cape Enrage, and I am sorry to say that I found reason to suspect that my hospitable friend was a rank Annexationist.

To the lot of the poor Irish who have come without capital, and have located themselves in this county, poorer land has fallen. The New Ireland Settlement, which my friend Mr Brown visited yesterday, is generally on the poor grey-sandstone soil, with here and there a patch of the good red loam. They do not appear so prosperous, therefore, as many other settlements we have seen.

From Hillsborough we were accompanied by five miles of good red loams, which used to be good wheat-land, producing twenty to forty bushels an acre. A poorer grey sandstone and gradually rising country then commenced, after which the road ran much through the

forest, with only occasional clearings. The settlers are chiefly of Dutch descent—the natural increase driven by necessity to seek the most eligible spots in the still uncleared forest. Here, as elsewhere in the province—indeed, I believe, from what I have heard, it is very much the same in all parts of North America—land-speculators have secured all the best land which is readily accessible, and hold it in a wilderness state till a rise in price induce them to sell. Thus the poor men, who cannot afford to give these capitalists their price, must be content with inferior locations, and encounter greater difficulties in providing for their families. The Provincial Legislature has adopted various measures with the view of remedying this state of things. An annual tax on all such granted lands as are still unimproved—such as has been imposed in Canada—and applicable to purposes of local improvement, is as likely a method of forcing some of this land into the market on reasonable terms as any other that has yet been proposed.

I have been told that some of the largest fortunes in the United States have been made by land-speculations; and the interest of private holders of large grants has often been the principal exciting cause of those violent emigration fevers which have periodically heated the blood and unsettled the lives of so many thousands, not only in the British Islands and on the continent of Europe, but in North America also—from St John in Newfoundland to Buffalo on Lake Erie, and even to St Louis on the Missouri.

From the higher central part of Albert County, through which we were now passing, several streams run in a northerly direction, and fall into the Petitcodiac. This river, as I have on a former occasion mentioned, about twenty miles above its mouth, turns at nearly a right angle, and, from flowing west by north, runs south by east down to Shepody Bay. From near *The Bend*,

as the small town situated at the angle is appropriately called, and on the south side of the river, a broad belt of elevated flat grey-sandstone country extends for twenty or thirty miles. It is interrupted by stripes of richer land, and of more or less extensive intervales, where the streams from the south traverse it on their way to the Petitcodiac.

The crossing of this tract, which we did in a diagonal direction, formed the principal feature in this day's journey. For some miles before our arrival at the Turtle Creek, one of these cross-streams, it proved to be a poor flat sandy, in many places stony, scrub-pine and larch barren. Here and there naked green spots of limited extent were seen, the sites of ancient beaver-dams, where these intelligent creatures, taking advantage of occasional hollows, had contrived to arrest and dam up the water. The distinguishing physical character of the whole tract is its extreme flatness, which causes the water of heaven to stagnate upon it, and renders naturally worthless many more capable places, which, at some future day, by means of arterial drainage, may be converted into profitable farms.

On the Turtle Creek some marsh-land and intervale occurred, not equal to the marshes of the Petitcodiac River, yet yielding two tons of hay an acre—and again on the Coverdale Creek five miles beyond; but all else was the same scarcely broken carriboo wilderness of poor flat country, swampy because it was level, and covered with perpetual scrub-pine, larch, and spruce.

After a ride of twenty-four miles, we crossed the Petitcodiac, and presently arrived at Nixon's, where I bade adieu to my friends from Albert County, and hastened on my farther journey.

Albert County has many advantages. It is picturesque and beautiful. It has rich red uplands, most fertile dyked marshes, and abundant fish along its shores. Its

agriculture is not—even in its most favoured spots—equal to its advantages; and large breadths of its most fertile wilderness are held as inheritances for future generations. We did not find the autumn ploughing so far advanced, even as among the more northerly French and Scotch of Botsford parish. This may be a result of the constitutional idiosyncrasy of the Dutch population; but the fact that twenty times as many turnips were sown this year in Albert County as ever was known before, argues that, even among them, agricultural progress has begun to find a place.

In ten minutes after our arrival at Nixon's we were mounted on a rude *unspringed* farm-waggon, behind an excellent pair of horses, which carried us swiftly to the west along the high road I had traversed before. The wind had been very high all day, and, though in the shelter of the broad wood we had felt little of it, many windfalls had been occasioned by it along this more open road. We saw the electric telegraph broken in two places by fallen trees, in the twelve miles which brought us to Steeves'; and there we met the Company's wire-mender and his staff, who had been posting from place to place all day, connecting it at the broken points. But finding that, as fast as he repaired one spot, a fresh windfall broke it at another, he had stabled his horses and given up the pursuit till the wind should abate. This is an evil with which, in our open countries, we are unacquainted, but which frequently happens among the forests, and sufficiently accounts for the interruption of electric communication which often takes place between Halifax and St John.

Little more than an hour brought us to Steeves', where we obtained another conveyance, and turned off to the right to visit and spend the night at Butternut Ridge, a distance of eight miles. After ascending and crossing a comparatively low ridge, in which limestone

and gypsum and salt-springs are met with, we descended into the valley of the North River, a tributary of the Petitcodiac, and passed over a broad flat, stony, and swampy barren, through which the river runs. On the succeeding rise, drier land and increasing clearings were seen. Rounded hills and low undulating ridges of light sandy and gravelly soil—the debris and drift of red conglomerate—covered the slope; and when, as we neared the top, the ascent became more steep, cliffs of the conglomerate rock in place, and soon after of a solid thick bedded limestone, presented themselves. These latter rocks form the surface of the Butternut Ridge, which, from this summit level, inclines towards the west in an undulating slope of rich red-sandstone soils towards the valley of the New Canaan and Washademoak Rivers. Beyond this come on again the flat grey sandstones of the coal-measures, about the centre of the province. These are covered over large areas with bogs, and swamps, and carriboo plains. Were the geological structure of this country once accurately investigated and mapped, nothing would be more easy than to indicate the capabilities of its several soils, and generally their localities and relative extent, from the colours which the map would present.

A thick rain had come on before we reached the house in the settlement in which we were to find quarters. The title of Colonel given to our intended landlord made me anticipate comfortable accommodations; but disappointment was the result. It was another of those cases in which people do the traveller a favour by taking him in. The landlord was a thriving man, had a fine family of grown-up sons and daughters, and some of the sons, who still lived with him, were already settled on excellent farms of their own. I believe they intended to be civil to us according to their knowledge; but one

small sitting and eating room was common to this large family, their three guests, and sundry large chests and supernumerary pieces of furniture. We were wet and tired, and yet obliged to talk; and because I would not sleep double, I was condemned to a night of vain attempts at ease or forgetfulness. On the whole, I passed no night half so uncomfortable in North America as that which I encountered at Butternut Ridge. And I had, besides the actual bodily experience, this additional grievance—which to a grumbling Englishman is not an unsore one—that, as there was no pretensions to a hotel, and no hanging out for guests, I was not privileged to complain, but was expected gratefully to receive my discomfort, to pay well for it, and be thankful.

CHAPTER XIX.

Butternut tree on calcareous soils.—Value of the land.—Poor land, what it means in a new country.—Windfalls.—Smith's Creek.—Influence of circumstances on the direction of agricultural progress.—Unnamed mountains.—Difficult bridge.—Hollows and pits of the gypsum deposits.—Trees growing on pure gypsum.—Agricultural experiments with it.—New Jersey loyalists in the valley of the Trout Brook.—Change within sixty years.—Causeless grumblings in New Brunswick.—Fall of snow.—Purple colour of the sky.—Clearness of the moonlight sky.—Danger of too much clearing of the native forests.—Mildew on tidal rivers.—Failure of the wheat and barley crops.—Buckwheat cakes and bran.—Good red land.—Surly host.—Scenery on the Hammond River.—Igneous rocks.—Geological structure of the country.—Dislocations and repetitions of strata.—Imaginary section of the province.—Relation of its soils to its rocks.—Economical value of a knowledge of these relations.—Scenery on Loch Lomond.—Annexationists in St John.—Complaints and distress in Maine.—Comparative condition of Maine and New Brunswick.—Musquash marshes.—Value of farms.—Plague of Grubs in the marshes.—A contented Irishman.—How to ruin a farmer.—Religious sects at St John.—River Lepreau.—Importance of the physical characters of soils.—Darkness of moonless nights in the woods.—St George or Macadavic.—Drive up the river.—Poor land upon it.—Limestone of l'Etang Harbour.—Drive to St Andrews.

October 31.—The butternut or white walnut, *Juglans cinerea*, from which this ridge is called, is described as growing in rich woods, and on the banks of rivers.* But the true natural predilections of a tree are to be observed where it thrives in natural forests untouched by

* Dr Torrey—*Botany of New York.*

the hand of man. This tree, so valuable for its large oily nut, is not known in the woods of Nova Scotia; and it abounds in New Brunswick only in particular places. Along with the Basswood, *Tilia americana*, it is stated by Dr Gessner to prefer a calcareous soil; and that preference might be inferred from the nature of the rocks, and the name still retained by this settlement of Butternut Ridge.

On the highest part of the ridge, which gently slopes towards the west, thick-bedded hard blue limestone occurs, in which, though I examined many exposed surfaces and weather-worn places, I could discover no visible fossils. In many spots it comes to the surface, and over a large extent of the slope the impervious rock is covered by a thin soil. On this, in its wilderness state, the butternut prevailed as the characteristic tree, and invited the earliest settlers, since, where the butternut thrives, experience has shown that the soil is favourable to the growth of wheat. Towards the west, the red marl and gypsiferous beds come on, and form undulations of rich land, covered still by a mixed forest-growth of yellow birch, maple, beech, and hemlock.

This land is now valued by the holders at 10s. an acre. It will take £2 an acre to clear it; but it will grow all the crops suited to the climate, and it gives a *first* crop that usually pays the whole expense. In a new country, and among poor settlers, this is called good land. Poor land, among them, is a relative term. Land is called poor which is not suitable to a poor man, which, on mere clearing and burning, will not yield good first crops, and which requires to be stumped and ploughed before profitable crops can be raised. Larch and hemlock land are often of this kind. The thin upper soil on which these trees grow is not rendered fertile by mere burning the wood upon it. A new soil must be turned up first. Thus that which is *poor land for a poor man*

may prove rich land to a rich man, who has capital enough to expend in bringing it into condition. One reason, therefore, why land covered with broad-leaved trees is universally valued, is that, besides being for the most part really good, at least on the surface, it will give a succession of abundant first crops by merely felling and burning the trees upon it, and scratching in the seed.

Improved farms sell at the rate of 50s. an acre. One of a hundred acres, with twenty to thirty cleared, may be bought for £250, and one of two hundred acres, with forty cleared, for £500 currency, (£400 sterling.) Farm-buildings and house are, of course, included, and the price will vary with the quality of these.

Starting early, the morning being still dull, and threatening rain, we drove through the settlement, and then, diverging to the south-west, entered the wilderness again, on our way to join the high-road to St John, in Sussex Vale.

In countries like this, the woodman's axe is a necessary appendage of the traveller's waggon. Every high wind throws over numberless trees, often of large size, and some of these are sure to fall across the roads, which in every direction run for miles through the forest. We met to-day with many such windfalls. Some we were able to pass by making a short detour; but others would have given us trouble, and caused us much loss of time, had not some earlier traveller fortunately preceded us. We found the road open, therefore; and though we were put now and then to a little inconvenience in getting round some of the larger fallen trees, we fortunately suffered no material detention.

Leaving the Butternut Ridge behind us, we ascended, and crossed a ridge of grey sandstone, covered by poor soils, and descended between the upper forks of Smith's Creek, a tributary of the River Salmon, which I have already described as running through Sussex Vale. Our

route lay along this brook, therefore, for the rest of the day. While among its forks, we passed over four miles of carriboo plain, blue-berry swamp, and sweet-fern barren. When we subsequently reached the main stream, rounded hills and sloping accumulations of sandstone drift accompanied us along the wide valley; while high hills on either hand, clothed and crowned with wood, wanted only a bright sunshine to bring out their beauties. Clearings now began to appear on the dry lighter gravelly soils of the sloping sides of the valley, and within a few miles I was surprised to see clearings and cultivated fields scaling the steep hill-sides, and covering the red lands with corn to the very tops of the hills.

The traveller who has visited the Scottish Borders, and has looked at the tillage near the town of Wooller, or has followed the streams from Cornhill on the Tweed to Yetholm, where the gipsies live at the foot of the Cheviots, has admired, no doubt, the cleanness of the fields, the richness of the crops, and the perfection of mechanical husbandry, which accompanied him along every step of his progress. But that which has most called forth his admiration has been the marvellously steep hills which are subjected to the plough, and the lofty summits on which the luxuriant turnip or the golden corn gladden the eye on the bright sunshine of a midsummer day. He has thought, no doubt, of the industry of the farmer, and of his skill, but especially of his energy and perseverance, in subduing to the plough steep places like these, and crowning such lofty summits with most productive crops.

It is no disparagement to these skilful Border farmers, that, in this remote corner of New Brunswick, on the steep slopes which girdle the stream called Smith's Creek, the same indications of energy and perseverance were seen. Steep slopes were cleared of forest, and to their summits were covered with crops. The same skill and

neatness, and attention to details, and signs of capital, and of assiduous industry, were not seen; but the subjection of apparently difficult nature was visible, as it may be seen on the Scottish Borders, or on the flanks of the Lammermuir hills, or of the more lofty Grampians in the valley of Strathmore.

It is similar land that gives rise to such similar appearances in different and dissimilar countries, where the people is the same. We were again on the flanks of hills of red conglomerate, which, by their crumbling, formed soils so dry, fertile, and easy to work, as to tempt the husbandman from the more difficult though leveler plain, higher and higher up the hills, with his axe and his team, every year that passed. So much is man the creature of material circumstances, so similar is his conduct, where natural phenomena are the same; and so possible is it to predict in a new country, from the trees and rocks that cover it, where men will first settle, how they will first plant and sow, in what directions their culture will proceed, where the plains will be preferred by the cultivator, and where he will rather brave the adventure of subduing the loftier hills.

As we approached the mouth of the river, where it opens out into the wider vale of Sussex, the red conglomerate hills on either hand became loftier, and presented those rounded tops and steep sides which characterise these rocks in nearly all countries. But the infancy of civilisation is shown by the deficient topographical nomenclature. Beautiful mountains, which one would naturally like to fix in one's memory by the help of a name, are here still unnamed, so that one can neither tell in conversation where one has been, nor even point out on the map the particular spots on which we have looked with the highest interest. One striking hill only in all this valley of Smith's Creek has been distinguished by a name. It has been called Mount Pisgah; and that no

sentimental associations might be called up in the traveller's mind by this more ancient designation, another, which is afterwards seen on the opposite side of the vale of Sussex, is called Piccadilly Mountain! The admirer of natural beauty, whom the former name might lead to think of the first settlers as God-fearing pilgrims coming into a weary wilderness of privations, is at once brought back by the second to the realities of bustling, material, selfish life.

When within three or four miles of our journey's end, it became necessary to cross the creek, now a stream of considerable size. The bridge however, being under repairs, was impassable; and the rain had so swollen the river, that, after taking soundings by the aid of a canoe, we found it far too deep to ford with our waggon. No house was near, and we had called a council to consider what was best to be done. Fortunately, while we were still deliberating, a waggon came up on the other side, and the party it contained were as much at a loss as ourselves. A little bargaining, however, induced the owners of the two vehicles to exchange cargoes, and as the logs which formed the main-beams of the bridge were still standing, two stout, sure-footed lumberers soon transported the luggage from either waggon across the stream; and happy to proceed, though with somewhat worse accommodation, we were again soon on our way.

It wanted still a couple of hours of nightfall, when, having parted company with one of my friends, I arrived for the second time at Scheck's comfortable house, in the middle of Sussex Vale. While daylight lasted, therefore, I set out with Dr Robb to explore the gypsum deposits which were said to occur in various localities among the woods at a moderate distance.

We were now upon the Salmon River, along which I had travelled on my previous journey from Miramichi to

St John. In the vale of Sussex it receives s veral tributaries, one of which, flowing in at the eastern end of the valley, is known by the name of the Trout Brook. This brook, before its junction, skirts on its right the base of lofty cliffs of red sandstone conglomerate, the surface of which declines towards the north. Over this, with a northerly dip,* comes on a thick deposit of slaty limestone lying in curved beds, which forms cliffs near a Mr Pugsley's farm-house, on the high road, where the conglomerate is invisible. Beyond this, in the direction of the dip, at a short distance in the woods, the quarries and swallow-pits of gypsum occur. We made our way with much difficulty through swamps and windfalls to one spot, on the south of the road, where the mineral had been occasionally dug out in considerable quantity, and where cliffs and hollows of every form were made difficult of access, by the entangled fallen timber and impassable muddy pools of a swampy wilderness of untouched forest. But, half a mile to the north side of the high-road, we found the access to another locality more easy, and the appearances far more interesting. The gypsum rock, which does not rise sensibly above the general level so as to form cliffs, is soft and weathered. Its surface, covered with a thin soil, is full of sinks or pits, like round artificial wells, from one to twelve feet deep—some dry, others containing water, with their walls and ledges separating them from one another. In all these pits, and rooted on their sides at various depths, and fixed on their narrow rims upon the pure gypsum, young, healthy, as well as large, old cypress trees, and white birches, with a few firs, were growing luxuriantly, or had been growing till very recently. The fires which have so extensively raged this summer, had seized this wood also in which we now were. The trees stood erect

* My notes say north-easterly.

in vast numbers, with tall, naked stems and blackened branches; and those which were growing in this place of pits, were also all more or less injured by the fire. On the whole, the spot had a most striking and desolate appearance, and will well repay the traveller for the hour's delay it will cost him to visit the spot. One great hollow rim seemed to encircle the area over which were spread these smaller ponds and pits, intermixed with ravines and cliffs, caused by the pits falling or merging into one another. While portions of the deposit were being dissolved out in detail, and carried off through the porous wells, the whole area was sinking in a mass—destined, no doubt, in time to become one of those extensive ponds or swallows such as I had previously seen on the rich land to the east of the Amherst marshes, and in the country above Windsor in Nova Scotia.

Though gypsum is here so abundant, it has not been much used for agricultural purposes. I conversed with two farmers, one of whom had tried it without effect, the other with marked benefit on oats and grass. Among the grass, it had brought up a crop of clover, where none had ever been seen before. I have already mentioned that, in western New York, a hot dry summer is considered most favourable for the beneficial action of this mineral substance. This may have been the nature of the season when it succeeded with the one, and not so when it failed with the other, of these experiments. The fact of young and old trees growing as above described, with their roots fixed in and upon the pure soft gypsum rock, proves at least that it is unlikely, even when present in large quantities in the soil, to do material injury to vegetation. It might be useful, however, to try which of our cultivated plants will, and which will not, grow well under such circumstances.

I have already spoken of the good land and fine farms in the beautiful vale of Sussex. The extensive

clearings bring out the natural picturesque of the mixed mountain, river, and forest scenery; while the still life of the peaceful church, and scattered houses of the valley, and the cattle grazing in the flat meadows that skirt the stream, unite to impress the traveller in New Brunswick the more, from the comparative rarity in which he finds such pictures scattered as yet over this new province.

The Trout Brook, of which I have spoken as a tributary of the Salmon River, which flows through the vale of Sussex, emerges from a less extensive but very beautiful valley, apparently girt in by lofty hills at its upper end. This valley is peopled for the most part by the descendants of the New Jersey loyalists — a Dutch volunteer corps, who settled here in a body at the close of the American revolutionary war. Though the clearings are extensive now, and many large comfortable-looking farm-houses are scattered along the valley, yet it was all a roadless wilderness then. Canoes on the rivers, and the Indian portages, were the only means of transit in summer, and sledges and snow-shoes in winter. There are persons now living whose fathers were obliged at that time to haul flour, for the support of their families, on hand-sleighs all the way from St John. Numberless moose-deer then filled the forest, and helped to feed the early settlers till their lands were cleared and capable of producing corn. Now, sixty years after, good roads, well executed bridges, cleared land, excellent crops, comfortable houses, high-bred cattle and horses, good conveyances public and private, commodious churches, well-taught schools, well-provided inns, and an intelligent industrious people—all in the midst of scenery lofty, soft, rounded, beautifully varied with hill and valley, mountain and meadow, forest and flood—have taken the place of the pathless wilderness, the endless trees the untaught Indian, and the savage moose.

And my readers will scarcely believe that all this improvement has taken place in a country where public declaimers, and their organs, complain of want of general progress—where murmurs, long and deep, are heard at the slow pace with which authorities, provincial and imperial, hasten forward the march of material development. Doubtless the British blood and free institutions, with which New Brunswick is blessed so largely, are in some measure to blame for such groundless grumblings. If John Bull were carried unknowingly to heaven, he would compare it with some other place he had seen or heard of, and forthwith get up a grievance!

Nov. 1.—I had arranged to start this morning in a south-easterly direction to the Bay of Fundy at Quaco, where the red sandstone forms the coast-line, for the purpose of crossing the strike of the beds in the intervening country, and of tracing, if possible, the connection of the red rocks of Sussex Vale with those of the Bay of Fundy. But, though the previous evening was bright and clear when we retired to our rooms, the ground this morning was covered with snow, and the flakes fell thick and continued to descend during the whole day. It would be impossible to see anything of the country, were I to proceed; I therefore made up my mind to stay in my comfortable quarters till the fall should cease, and till the snow which covered the ground should melt.

It is usual, in this country, for a fall of snow to appear in November, though seldom so early in the month as this, and then to melt off and disappear. When the November snow of last year (1848) went off, it left the fields open for the cattle as late as Christmas-day. On the approach of snow, a curious purple colour appears in the sky in this climate—a dark-bluish purple—probably caused by some peculiar action of the snow-clouds upon

the rays of light. It is very striking, and such as I do not remember to have seen in any part of Europe.

Another thing which has struck me exceedingly, when belated and travelling on a bright night, is the extraordinary clearness and brilliancy of the heavens. The stars appear larger, and far more numerous, than one usually sees them in Britain with the naked sight. One feels as if one were piercing into far space, and could penetrate so deep into the distant blue that nothing could escape the eye. And then, when the auroras play with their varied hues, though the attention is in some degree diverted, by the play of colours, from the excessive clearness of the moon and the constellations, still a mysterious interest as well as beauty are imparted to the heavens, which rarely characterise even a North British sky.

The extensive clearings in this district—which have been made without any special reference to the future, or perhaps in consequence of an unfounded faith in the mineral resources of the country—are already beginning to operate in an unexpected way on the comforts of the whole population. In the rage to clear and sell, the hardwood timber on many farms in the valley has been extirpated; so that those kinds of wood which are most esteemed for fuel and for building purposes, have already become scarce and dear. White birch and rock-maple are prized for fuel, and those who possess land which bears these kinds of wood, now sell the right of cutting it to their neighbours at £2 an acre.

The white or Weymouth pine, which is best for a frame-building, is not now to be had in the valley. Spruce and such common timber are cheap, but the white pine has often to be brought all the way from St John.

As regards building-timber, there is no present remedy for this improvident waste. The existing and future generations must suffer for the lavish and wasteful hewings down of the past. In a very short time

valuable timber of this sort will be as dear in the interior parts of North America as it is now in most parts of England.

But as regards the obtaining of fuel, it is possible that no evil may ultimately result from clearing away the trees which are most esteemed for this use. Should the anticipations hitherto encouraged as to the abundance of coal in this province, and even in this very neighbourhood, be realised by future inquiry, then the clearing the land of timber of all kinds will be a gain to agriculture, and no loss in other respects. But should it be otherwise, then those farms which have reserved no natural wood for domestic use, will be less valuable to their possessors than others on which ten acres of good fuel-land, at least, have been reserved and carefully nursed for the winter's use of the proprietor's family, while the cost of fuel to the poorer inhabitants will every year increase. To the province generally the same remarks apply. In every country where wood is the common and only available fuel, the desirableness and value of farms is very much augmented by the possession of a sufficient reserve of natural firewood forest; and in an infant colony, in which this may ultimately be the case, it is very desirable that early attention should be paid to so important a consideration.

Rust and mildew, as with us, generally attack the wheat more in the valleys than on the uplands; but I am not aware that it has been observed in other countries, as I was informed is the case here, that in tidal rivers they are more frequent and destructive above the reach of the tide—where the water is, of course, entirely fresh—than on the banks of the lower parts of the rivers, to which the daily ebb and flow ascends. If a current of air always follows the tide, it may be possible, by its action, to explain the occurrence of such a difference, if it be really generally observed.

Sussex Vale formerly produced excellent wheat, which it refuses to do now. It is complained, also, that, though the barley rises to a great height, it does not fill. But let any one who knows even the rudiments of farming say, if, after the following treatment, he would expect that good crops of wheat should be reaped, or heavy ears of barley. When the land is cleared of wood, potatoes are put in with (sometimes) a little manure, and these are followed in succession by a crop of wheat, a crop of oats, and a crop of barley, when grass-seeds are sown and hay is cut, without the addition of any manure, for ten or twelve successive years. Would any English farmer expect his best land, after such a sixteen years' cropping, either to fill his barley or to give him a good crop of wheat? But in Sussex Vale the same exhausting system has been carried on continuously long after the first sixteen years of cropping had expired; so that the wonder is that it continues to produce straw, not that it refuses to produce abundant grain also. I do not venture to say whether or no the wheat-midge is more likely to attack and ravage the crops on exhausted than upon rich and well-treated land; but it is certain that, leaving out of view the visitations of insects and fungi, whose source and history are almost unknown, a sufficiently generous and skilful treatment ought to make—and, if the climate has not altered, *will* make—this and other parts of New Brunswick produce the same crops in the same luxuriance as they have been used to do in past years.

Buckwheat is grown in the valley as a substitute for wheat in home consumption. The rough or curly variety, of which I have already spoken, gives a sweet white flour, which makes excellent hot pancakes. When well prepared, as I had them at this place, they more nearly resemble our English crumpet than any other

cake I have seen in America; and when eaten hot with maple syrup, they are really delicious.

The bran of this curly buckwheat is greatly approved of for feeding pigs. Without it, my landlord affirmed that they could not raise good pork at all. This, of course, is only a superlative mode of expression. The shellings or outer husk of this grain are sent down the stream by the millers, as the oat-shellings used to be by the millers of North Britain. When they understand the wants of their land, and become anxious to supply them, they will find out a method of converting this waste into a valuable manure.

Nov. 5.—For two days the snow fell continuously, but a thaw then set in rapidly; and this morning, though frosty and clear above, the fields were green and free from snow below. I mounted a light waggon, therefore, with a pair of good horses, and started across the country by a little-frequented line of road for St John, a distance of forty-five miles. During the first seven or eight miles, while my own waggon went on, I had the pleasure of the society of Mr Evanson of Sussex Vale, of whose hospitable attentions I have formerly spoken, who accompanied and conveyed me so far.

The first part of the journey was over good land; but as soon as we were fairly out of the valley, I found myself again upon the grey coal-measure sandstones, which appeared in the brooks and on the hill-tops. Thin seams of coal had even been discovered in the bed of the brook, but, during the brief search my time permitted me to make, I was unable to find them. I passed much good land, however, chiefly of a red colour, bearing hardwood, and occasional stony or rocky tracts resting on the grey sandstones, before I came to the Hammond River, a distance of fifteen miles. This uncleared or wild land is all granted—the property of private proprietors, that is—and, within five or six miles

of Sussex Vale, is valued at £2 an acre. I was very much tempted to buy four hundred acres of wilderness which were offered me at this price, but I succeeded in restraining myself. It will make the fortune of some future purchaser.

There may be minor breaks and upheavals of the strata, although the soil is, generally speaking, red between Sussex Vale and Hammond River; but here the break in the rocks is on a magnificent scale, and along both banks of the river lofty cliffs of the red sandstone conglomerate accompany the traveller for many miles.

We stopped, my conductor and I, at De Bout's, where we came upon the Hammond River, to bait our horses. This man is the owner, I was told, of a thousand acres on this river, of mills also, and of a more valuable family of sons and daughters, for some of whom he was building comfortable houses. He was standing in front of his house, when we arrived, basking in his shirt-sleeves in the November sun. My conductor addressed him as an old acquaintance, and asked refreshment for his horse. He was the second person in the province, I think, whom I had found costive and unwilling in his answers to my questions regarding the district in which he lived. I therefore began to refrain my attentions to him, and looked about the neighbourhood till the horses were fed. But it was now his dinner-time, and he asked my conductor to share the family dinner before he started; "and you may bring the *man* with you," he added. I went in, as I supposed he really meant nothing, and sat down with him and his family and my conductor, which it is as usual to do in New Brunswick as in Nova Scotia and the States. The chief dish was a roast goose cut up into fragments, and served in its own oil—a dish not specially suited to a traveller who many

years before had learned he had a stomach—a phrase which those who are read in Dr Kitchener will feelingly understand. I made a fashion of turning over the fragments with which I was served, and, with a potato and a bit of bread, did as much in the eating way as gave me an excuse for leaving the table. "The man," however, who was so ungraciously invited, paid for his dinner, as he was no doubt expected to do, and, as soon as the conductor was ready, started again on his journey. One hears a good deal from American travellers of such unpleasant hosts, but I have met with them only in a very few places, and those chiefly where few passengers travelled, and the landlords thought, or wished to make you believe, that, besides taking your money, they were doing you a favour by taking you in. Were more travellers to take these routes, the profits derivable from receiving them would become more palpable, and competition would beget civility. This implies, indeed, or appears to imply, a want of innate civility among the people at large; but I doubt if that is a necessary conclusion from the fact I have stated. It often happens that those who, in out-of-the-way places, first open their doors to receive strangers for hire, are not the choicest and most generous specimens of the population among which they live. They who afterwards take up the business in a regular manner are a better class, and know, besides, that civility is one of the most important elements of a traveller's comfort in an English inn.

Leaving De Bout's, our course lay more to the west, and along the course of the river. In about half-a-mile the conglomerate hills on either side retired, and formed a wide valley of great beauty, with rich bottom-land, rounded hill-tops covered with wood, a somewhat winding river, and magnificent conglomerate cliffs at times thrusting out their naked fronts from among the trees, which clothed every spot where a root could fix. The

day was fine, and, maugre the greasy goose, I enjoyed this drive along the Hammond River very much. Though the breadth and majesty of the St John was wanting, yet, for its extent, it struck me as more full of varied natural beauty than any river-scenery I had visited in New Brunswick. If it be not already—for want of accommodations which are found necessary at a distance of thirty-five miles—it is sure to become one of the most favourite places for rural leisure and enjoyment to the future inhabitants of St John. Along the six miles which bring us to Kilpatrick's—the twenty-four-mile house from St John—we passed many nice, tasteful white houses of good size, signs of good land and prosperous farmers, which gave an additional charm to the natural attractions of the country.

Before reaching Kilpatrick's, we had ascended from the water-side to the high ground above the river, had crossed an outcrop of the red conglomerate, and were now on grey sandstone—poorer and stonier land. But after two or three miles we descended again by a steep bank, crossed the Hammond River by a bridge, and came immediately into a new country, both geologically and agriculturally. Igneous rocks here appeared to prevail—the first I had seen since I left the falls of the Nepisiguit River, above Bathurst—a dark trappean rock intermingled with a greyish and a very striking greenish felspar porphyry. The river appears to separate the stratified from these crystalline rocks, which form nearly all the boulders, and, mixed with slate-drift, produce the poor spruce and other soft-wood soils which prevail for the next six miles.

These igneous rocks introduce a new character into the scenery. Instead of taking the nearest way to St John, I had crossed the river, and was now following a longer route, that I might see the romantic sheet of water, and the mountain overhanging it, to which the

names of Loch Lomond and Ben Lomond respectively have been given.

Nor did I regret it on other grounds. To one travelling over a new country so rapidly as I had done over this of New Brunswick, with the view of forming, and of subsequently stating for the information of others, an opinion as to its agricultural capabilities—and of calling to my aid, in the broad views I was necessitated to take, the aids of geological structure—the country through which I had come, during the last fourteen days especially, changing in character perpetually, and traversed by great fractures, did appear very perplexing. But leaving now, as I did, finally, in this part of my tour, the red sandstones and coal-measures, and coming upon what, by its true igneous character, had evidently been a seat of large disturbances in remote times, I was enabled to pick up the true key, I believe, to the whole complicated structure of this south-eastern, as well as to other important parts of the province, and to throw a very clear light on the agricultural character and capabilities of the whole. and upon the immediate cause of their varied capabilities, which had so frequently re-presented themselves to my notice as I passed along.

I had seen, wherever I went over the country, that, where the red conglomerate appeared, more or less good land was certain to exist—that the same was true in the neighbourhood of beds of limestone, and always where the red marls, salt springs, and gypsum occurred. It was equally conspicuous that, where the grey sandstones of the coal-measures prevailed, the soils were inferior in quality—unless covered with drift from other rocks—though not always in an equal degree. On some beds of the coal-measures—where the sandstones were more intermingled with shales, for example—the soils formed from their mixed debris were more tenacious and capable than such as were derived from siliceous sandstones alone.

But the numerous dislocations—tossifications, as the miners in Teasdale expressively call such as I now speak of—which traverse the country, and the conformable strike and dip of the beds on either side of these dislocations, have hitherto perplexed the geological explorers of the province to determine the true relative positions of the red and grey beds. A succession of ridges occurs, in one of which the grey beds may appear to dip underneath the red conglomerate; in another, under the limestone or red marls; while in a third the grey beds seem to overlie all these rocks, and the red marls and gypsiferous beds to dip underneath them.

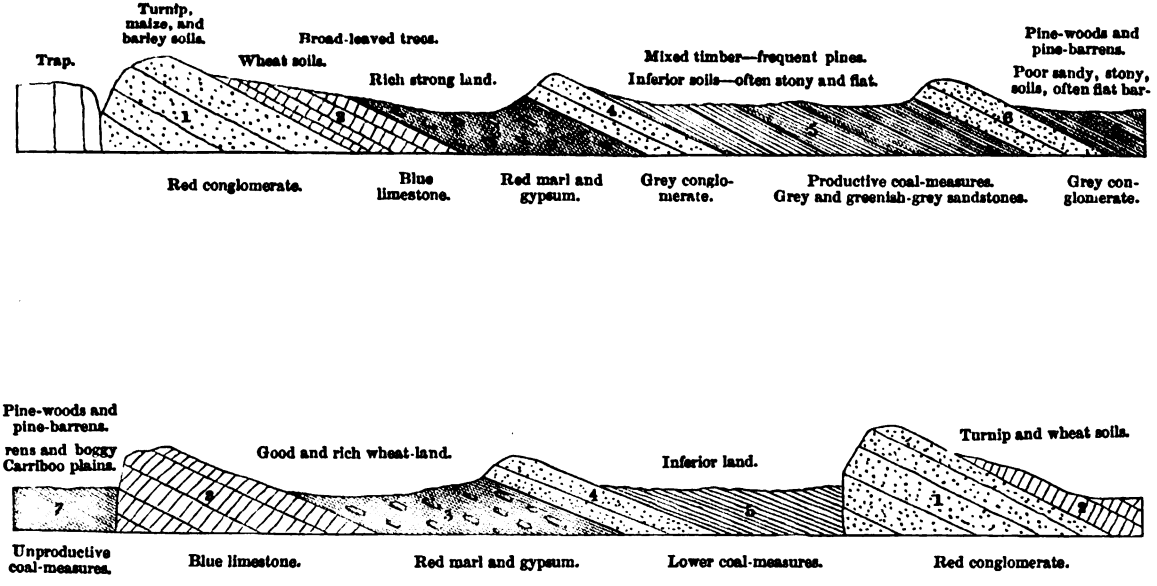
But the whole of these perplexing appearances are explained, if we take the section already given of the Sackville marshes as a representation of the general succession of the rocks of this part of North America. Immediately upon the red conglomerate rests the limestone, over this the red marls and gypsum, upon this the coal-bearing grey and greenish-grey (grindstone) sandstones, with an uncertain conglomerate at their base; upon these the grey conglomerate; and over this the thin slaty soft non-coal-bearing, or unproductive yellowish-grey sandstones, which cover so large an area in central New Brunswick.

And if, proceeding from the centre of disturbance, where the igneous rocks occur, as on the Hammond River, we admit the existence of a succession of dislocations and upheavals of the red conglomerate, and the rocks which lie over it, so that a succession of ridges is formed, on which sometimes the red conglomerate, and sometimes the limestone, forms the summits—beyond which ridges, as the country slopes away, the other upper beds come on, till it flattens into the stony barrens of the upper grey sandstones—all the geological and physical appearances are explained, and all the changes in agricultural capability accounted for.

The following section illustrates this view of the general structure of the province, in so far as the coal-measures, the red sandstones, the limestones, and the red conglomerate, are concerned. The section represents the different series of beds as lying conformably to each other. This may not, however, be the case, especially as regards the connection of the grey coal-bearing measures with the gypsiferous marls beneath them, and the whole of these beds rest unconformably, I suppose, upon the upper Silurian slates. Whether there be below the red conglomerate a series of grey sandstones, separating it from the Silurian rocks, I cannot venture to say, as I had nowhere the opportunity of seeing a junction between the conglomerate and any subjacent rock.

Indeed, I may say, that having commenced this tour without any precise ideas of its general structure—for none had yet been published—and with another leading object in view, I lost valuable opportunities I should otherwise have availed myself of—passed by spots the inspection of which would have cleared up many difficulties, and misinterpreted, by the way, appearances I should have clearly understood, had I started on my journey with the above section in my hand, instead of being able only to put it together after I had travelled along the whole wide and frequently disjointed region, from the red sandstones of the Canadian side of the Bay de Chaleur, to those of Nova Scotia, at Amherst and Minudie, and of Sussex Vale, and the Hammond River.

Now, the agricultural lesson which this section teaches is most striking, and shows as close and satisfactory a connection between geological structure and agricultural capability as is seen in the very interesting region of western New York, on which I dwelt so long in a previous chapter. Among the more striking points I may notice—referring to the numbers in the section—


Trap.
Turnip, maize, and barley soils.
Wheat soils.
Broad-leaved trees.
Rich strong land.
Mixed timber—frequent pines.
Inferior soils—often stony and flat.
Pine-woods and pine-barrens.
Poor sandy, stony, soils, often flat bar-
1
2
3
4
5
6
Red conglomerate.
Blue limestone.
Red marl and gypsum.
Grey conglomerate.
Productive coal-measures.
Grey and greenish-grey sandstones.
Grey conglomerate.
Pine-woods and pine-barrens.
rens and boggy
Carriboo plains.
Good and rich wheat-land.
Inferior land.
Turnip and wheat soils.
7
Unproductive coal-measures.
Blue limestone.
Red marl and gypsum.
Lower coal-measures.
Red conglomerate.

1. That where the red conglomerate occurs, light, more or less rich, gravelly, turnip and barley soils are found, so easily worked that the plough cuts its way to the very tops of the hills, and the difficult slopes are preferred by the cultivator to the apparently more easy plains.

2. Where the limestone comes to day, hardwood ridges or stripes of good wheat-land occur. The soil is often thin, especially where the rock is hard, and where the overlying marl beds have been extensively washed away.

3. That where either of the above two rocks is seen, a belt of rich red land, more or less broad, occurs, or will be found towards the dip of the beds, and generally at a lower level, or forming a hollow valley. The surface of this belt will often also be undulated with round knolls and hollows, indicating the presence beneath of deposits or beds of gypsum. Over this surface of gypsiferous marl salt-springs also occasionally occur.

4. and 5. The productive coal-measures consist in their lower part of greenish-grey sandstones—among which those quarried for grindstones are found—which contain some clay, and often weather red. In their middle portion, where the known coal-beds occur, they present common coal-shales, intermingled with the sandstones. Both of these—the lower and middle parts—yield soils which, though inferior and stony, yet often possess a considerable degree of tenacity, and, by draining and liming, may be made reasonably productive.

6 and 7. The upper or barren coal-measures consist chiefly of thin-bedded sandstones, which crumble into sandy soils of a light yellowish colour. They flatten out in many places into broad, impervious, almost horizontal tracts of land, on which the water rests, and over which swamps, bogs, bilberry swamps, scrub-pine barrens, and carriboo plains extensively prevail.

These relations of the rocks to the soils are universal

in this province. Those of the upper and under coal-measures are in some measure interchangeable—bogs and worthless barrens occurring on the under series, and occasional good land on the upper. But observation bears out the general characters above given; and a study of the structure, while it confirms what the observer says he has seen, extends also his deductions to parts of the country which have not been visited, and in regard to which only partial information—mere hints, perhaps—have hitherto been obtained.

In an old country like our own, we can well enough appreciate the beauty and interest of such a close economical connection as the above, between geological structure and agricultural capability; but it is only in a new and unsettled country that the full value of such material generalisations can be perceived. To the provincial authorities, it indicates where settlements are likely to prosper most, and where immigrants, therefore, should be encouraged first to locate themselves. To the individual, it points out the physical phenomena which ought to guide him in his choice of land; while to all, in every part of the province, it tells the occupiers what their land requires most to make it productive, and where certain most valuable means of improvement are to be most economically obtained.

A few miles of the poorer country of igneous and metamorphic rocks already described, brought me to the head of Loch Lomond; and as I drove along the southern side of it, the view backwards was very beautiful. The high-lands which skirted the lake were covered with hardwood trees, still gay in all the warm tints of the climate; while several new houses in the course of erection, on either side of the sheet of water, showed that, even in these regions, where purely material considerations chiefly influence the people, there were some genial minds to whom, in selecting a retreat, the rich features

of the natural landscape could compensate in some degree for the poorer qualities of the soil.

The whole length of the lake is seven or eight, and its breadth three or four miles in the widest part. An extremely narrow part towards the upper end, which is crossed by a ferry, divides it into what are called the upper and lower lakes. An elevated ridge of hardwood land, over which the road passes near this narrowest part, afforded me from its summit a view of the lower lake, which would not suffer in comparison with many either of our English or our Scottish lakes. Its surface was calm and still; beyond it rose a wooded ridge of rounded hills, purpled by the broad-leaved trees which covered them, and terminated at the foot of the lake by a lofty, so called, lion's back—lower considerably than Arthur's Seat, yet still a miniature Ben Lomond. On the nearer side, low swamps bearing scrub-pine and other stunted fir-trees intervened in many places between the water's edge and the hills behind; but the irregular outline of the shore, and the dense clothing of pine and other mixed wood upon every jutting point of land, softened down the wildness which, in a bleak winter's day, the immediate shores of the lake must often present. Comfortable white-walled houses, scattered here and there, associated also, with all that was seen, ideas of human industry and of the progress of material civilisation in a new country, made one see, in fancy, what this unsubdued spot is yet to become, and think of the high and beautiful imaginings its natural scenery is yet to awaken in the breasts of many generations of future visitors.

At the lower end of the lake, and at the distance of ten or twelve miles from St John, a large hotel has been built on a stony spot conveniently situated, as regards the beauties and amusements of the spot, for the accommodation of parties from the city. A settlement of free blacks from the Chesapeake, of whom I saw one at work

here, was made near this place after the peace of 1816; but they are described as generally idle and unprosperous. I had not time to diverge to their settlement, to view their land; but certainly, if the soil they are obliged to cultivate be poor and stony, like that of which this immediate district in general consists, their want of success can scarcely be adduced as a fresh evidence of the incapacity of the race. An agricultural society in connection with that of St John has recently been established; and good fruits are said to be already apparent from the stimulus it has imparted.

The stony soils, derived from mixed trap and metamorphic rocks, which form the south shore of Loch Lomond —pine forests intermingled with rare patches of hard wood—and thinly scattered, chiefly poor Irish settlers, accompanied me along the road till I came within two or three miles of St John. I then descended to the flat marsh-lands, of which I have already spoken, and entered the city with my weary horses an hour after nightfall.

Oct. 6.—I could only spare one day to spend in St John, as the final snow of winter might now begin to fall within a week, and I had still a portion of the province to visit, which I could scarcely travel over in less than eight or ten days.

The depression of trade in the city had awakened, as usually happens, the loudest voices of the grumblers, and meetings were being held, in which the Provincial Government and Legislature were denounced, organised resistance to the mother country recommended, and Annexation lauded as the best of boons, and the surest remedy for all their sufferings.

The speeches of ambitious or disappointed demagogues are by no means an evidence even of their own opinions or belief; and if almost anything can be considered certain in regard to the temporary sufferings of the pro-

vince, it is that they were not caused by any action either of the Provincial or Home Governments, or by any evils which annexation to the United States would cure. This is proved by the fact that the adjoining State of Maine, which possesses very much of the same natural capabilities and resources of wealth as distinguish New Brunswick, has suffered of late years as this province has, and in a similar way. Thus, in a petition presented to the Legislature of this State as late as the 12th of June 1850, it is stated—

First, "That, for some three years past, shipbuilding and lumbering have been severely depressed—furnishing less returns even than investments in railways, which have yielded confessedly little."

Second, "That, for a series of years, we have been compelled to witness the withdrawal of much of our capital into enterprises in other States; and, instead of attracting emigrants, the departure from among us of the most enterprising of the young men of Maine."

Third, "That it is vain to expect to retain the natural increase of our population, without holding out inducements for labour beyond what are offered by the pursuits of agriculture and lumbering."

Were I to sum up in brief all the complaints I heard in New Brunswick, they would not assume so strong a form as in the above words of the people of Maine. And yet, to cure these evils, the men whom I found agitating St John professed to believe that annexation to the United States was alone required. Trade would then amend, capital would flow in, emigration would be checked, lumbering would revive, and European immigrants would pour into the new Paradise! The complaints of Maine are a sufficient answer to all these fallacious assertions.*

* It is gratifying to learn that the year 1850 has revived the spirits of the people in St John, and in the whole province. The harvest has

Oct. 7.—I started this morning for St Andrews, a distance of sixty-five miles. The mayor of St John, Mr Wilmot, to whom I had been indebted for many previous civilities, was kind enough to convey me with his own carriage and horses, and to give me the pleasure of his own company over this long and rough road.

Generally speaking, the same poor metamorphic-slate and igneous-rock country continues along the Bay of Fundy, all the way from St John to St Andrews. The first ten miles presented only a repetition of the rude district between St John and Loch Lomond; after which, five miles of rocky barrens, with scattered scrub-pines, brought us to Tilson's at the Musquash Marshes.

These marshes are formed at the mouth of the river Musquash, which here falls into the Bay of Fundy, and, like the marsh of St John, are very different from the marsh-lands at the head of the Bay of Fundy. I have already stated generally, of all the New England marshes also—of which there are many, at the mouths of creeks, and the head of bays and inlets, along the Atlantic border—that they have all one common inferior character. They consist for the most part of accumulations of black vegetable matter, spongy, soft, retentive of water, but very wasteful of manure, and very unlike, in richness or permanent fertility, to those which are formed by the mingling of animal and vegetable matters with the fine mud that floats in the waters of Cumberland Basin in New Brunswick, of the Bay of Minas in Nova Scotia, or in those of the Nile, the Rhine, or the Humber. They have little permanent richness in them at all. Like most other marsh-lands, they may be renovated by

been good, trade has revived, the imports have increased, and with them the revenue—so important a means of still further developing the internal resources of the country. It is to be hoped that better times will induce calmer and sounder reasoning on matters which concern the most important interests of the province, present and future.

flooding; but if the surface be subjected to the plough and exhausted, they are not restored, as warped lands are, by a deeper ploughing. They grow fair crops of hay for a while, and therefore are dyked where it can easily be done, and are much valued; but they neither deserve nor are they held in the same esteem as the dyked marshes of Sackville and Amherst.

The Musquash Marsh produces from 5 cwt. to 1½ ton of hay per acre—a produce which indicates its inferior quality. Of the dyked marsh, 50 acres produce about 40 tons of hay, which may be sold for £2 a ton, and the price asked for it is £10 to £15 an acre—a merely nominal or accommodation price, as it is rarely sold alone. A farm of 50 acres of dyked marsh, 50 of cleared upland, and 300 of wood and rock, sold here recently for £800 currency; and for another farm, now on sale, consisting of 100 acres of dyked marsh under the plough, 50 of intervale, and 850 of cold clay and stony upland, £1500 are asked.

Colonel Anderson, the owner of a large tract of this marsh, mentioned to me the singular circumstance, that about ten years ago, armies of grubs advancing in a line, and almost filling up ditches on their way, devoured the grass off the marshes, making them quite bare. About a month after, the whole was covered with a short growth of white clover. A similar circumstance, it was added, had been observed in the Sackville marshes in 1845.

Three miles beyond Tilson's, I conversed with Mr M'Crain, an Irishman from Belfast. He had been in the province nine years, was prosperous, thriving, and content, and would recommend his countrymen to come here. He had this year raised 380 bushels of potatoes from twenty of seed.

In this, as in Albert County, are many small waterfalls, with saw-mills erected upon them by the owners of

the land. The presence of this water-power has tempted so many to enter imprudently into lumbering, to the neglect of their farms, that it has here become a proverb, "If you want to ruin a man, give him a mill."

Mr Wilmot, besides being mayor of St John, was also one of the members for the county of St John, through which we were now travelling. There had lately been serious rioting in the city, in consequence of a premeditated and previously announced attack of the Roman Catholics upon a Protestant procession. The fear of one another in these North American countries is very great, and influences the conduct of public men in the discharge of any duties which may render them unpopular. It was alleged that certain of the magistrates of St John had disappeared on the day of the anticipated riot, to avoid being called upon to discharge an unwilling and unpopular duty. The proper steps, however, after some delay, were taken; certain lives were lost, and much excitement and discontent were the result; but Mr Wilmot was acknowledged to have done his duty well and boldly. In the country, among the people we met, I was pleased to find that this was appreciated. One man said to us, as we stopped at his door—"Well, sir, are you coming to canvass? I am ready for you. I didn't vote for you last time, but I mean to do so this, for the way you behaved at the riots." Another we met on the road said, "I have four votes now, sir—myself and my three sons—and you shall have them all." There is no really free country in the world where men will not be the more honoured the more faithfully their duty is performed.

On the Lepreau River, about five miles in advance, we passed some marsh, and a little improved land; and at Point Lepreau, a few miles to our left, good deep red loams occur. A patch of the red marl rocks is found there, and extends some miles up the river; but the

close proximity of a granitic district on our right cuts them off abruptly, and has probably changed very much their physical and mechanical characters.

Nothing more clearly shows the importance of the physical and mechanical characters of a rock on the kind of soils it is capable of producing, than the different aspect and capability of two adjoining districts, over which the rocks are the same in kind and in general chemical composition, but in one of which they occur, if stratified, in their natural unchanged condition, in the other in what is called a metamorphic or hardened state—a condition they have been made to assume by the agency of heat. Tracts of rich wheat and hard-wood land may extend in the former district, alongside of poor, stony, inhospitable stunted pine-lands on the latter. A knowledge of the ultimate chemical composition of its rocks or soils is not of greater importance, in reality, than that of the mechanical condition of the rocks of a country, or of the fragments that form its soils.

Cedar-swamps, alternating with naked rocky hills and rarer banks and slopes of better soil, accompanied us to Macgowan's, half-way to St Andrews, when dark night overtook us. We were still, however, five miles from Macadavic, where we were to quarter for the night, when daylight forsook us, and upon the low black swamps, with dark pine-forests closing us in on either side, we very soon began to find it difficult to pick our way. While the country was level, we crawled along without much apprehension; but on approaching a long steep descent with a ravine on the right, we were happy to avail ourselves of the pilotage of a native, whom we picked up at a house on the wayside. The darkness was as impenetrable as a London fog, with the additional discomfort of intense blackness; but two hours of alternate walking and driving brought us in safety through the Pennfield Settlement, which we could not

see, to the village of Macadavic. If the starry nights be more bright and beautiful than we enjoy at home, certainly the moonless and cloudy ones are as much more obscure and impenetrable.

November 8.—The town of St George, or Magaguadavic, abbreviated into Macadavic, stands on the lower falls of a river of this latter name, ten miles above its entrance into Passamaquoddy Bay. The falls are high, five in succession making together a hundred feet, the body of water great, and the power immense. Large saw and other mills, therefore, have long been erected along the narrow gorge through which the water rushes; and a town has sprung up containing several indifferent inns, an Episcopal, and two or three other places of worship, and the usual supply of comfortable houses for the lawyers, doctors, and dealers of the place. After breakfast, we engaged a light waggon, and drove ten miles up the river to the higher falls, where we found extensive saw-mills, and a village, chiefly of persons connected with and supported by the mills. Some fine scenery, bold hills and precipices crowned with wood, long bends and reaches of the river, and extensive intervales, made our drive pleasant; but the land in general was poor—sandy on the intervales and stony on the upland—and thinly settled. This river runs a long course of sixty miles through the province, taking its principal rise in a lake of the same name; but, for the most part, it passes through a poor, slaty, or metamorphic country; and, except where it occasionally widens, and forms desirable patches of intervale-land, there are few settlers along its banks, or in the country through which it flows. I suppose it is to the possession of poor land like this that the proverb they have in New Brunswick especially applies—"Land is like self-righteous men; the more a man has, the worse he is."

The failure of the timber-trade has caused a considerable emigration from this part of the province, chiefly of lumberers and others who were unaccustomed to the settled life of the farmer, and who saw in the country immediately around them no great promise of large success, were they to engage in the laborious cultivation of it. The time will come, however, when a home-grown people will spread over and subdue a large portion of this at present unpromising region.

Returning to St George, we drove ten miles in an opposite direction to l'Etang Harbour, on the shores of the bay. The coast is rocky, and the cove or harbour, being sheltered by low wooded promontories and islands, is not only a beautiful still spot of clear water, but is very safe for vessels, of which we saw none. The export consists of lime, which is burned here in considerable quantities for export to Boston. About a cord of wood is used for each ton of lime. The rock is a blue, occasionally, where trap-veins touch it, whitish and crystalline limestone, in thin beds interstratified with metamorphic clay-slate, and in thick layers of twenty or thirty feet, forming distinct rocky elevations, which are seen to run inland, in a north-easterly direction, for a considerable distance. The strata are nearly vertical, and the limestone without fossils; but as red sandstone occurs in one of the small islands in the harbour, it is not impossible that these may be metamorphic rocks belonging to the limestone and red marl group, represented in the section I have given in a previous part of this chapter. It would have been interesting, in reference to this point, to have been able to observe the conformity or otherwise of this red sandstone with these vertical lime-bearing strata. We rode through much poor land in this excursion, but we saw much good clay-soil also, now cold and poorly-productive, which drainage and the lime here burned would wonderfully improve.

After dining at Macadavic, we drove off for St Andrews, a distance of only twenty miles, but over a road of so hilly and almost mountainous a kind as to make it a very severe journey for our horses, and a very tedious one for us. Our road led us nearly all round Passamaquoddy Bay, and as the general strike of the rocks of the country is north-east and south-west, we were obliged in this detour to cross the extremities of all the ridges which terminate in this bay. Thus, in addition to swamps and rocks and barrens, similar to those of the previous day, we had also a succession of long ascents and descents, such as I had not crossed since I left the shores of the St Lawrence on my way to the Restigouche. In going down one of these long hills, and while we had still a long descent before us, one of the outer traces became unhooked; the horse—a young one—became restive and unmanageable; the harness became detached from its collar so that it could not hold back, the pace of the carriage increased, and everything frightful became probable. The skill and presence of mind of my companion Mr Wilmot, however, aided by the steadiness of the other horse, and its habit of obeying his voice, kept us upright until we were brought up all standing in the ditch at the bottom of the hill. But the young horse had become nervous, and showed considerable uneasiness every succeeding descent we came to, which made a safe conclusion to our journey somewhat problematical. To add to our perplexities, another pitchy night came on, while we had still six miles to go, and several steep hills to descend. The dark frown of the Chamcook Mountain, at the foot of which the road ran, after we had crossed the Digdeguash River, blackened the air, and made our pace the slower. But on reaching the mouth of the Chamcook River, and the tiny village of that name, three miles from St Andrews, our perplexities ceased. We passed

off the igneous and metamorphic slate-rocks, and came upon red sandstones and marls of a softer nature, and more yielding to atmospheric causes. One long and gentle rise from this point brought us to our journey's end, and we found a hospitable reception at the house of Colonel Mowat.

CHAPTER XX.

Town of St Andrews.—Decline of its trade.—Its climate.—Use of mussel-mud and sea-ware as manures.—Winds at St Andrews.—Importance of meteorology to agriculture.—Effects of spring frosts.—Annexation feeling, its alleged source.—Road to St Stephens.—Character of Charlotte County.—Bad farm-servants.—Want of heart between employer and employed.—Oak Bay.—View of St Stephens and Calais.—Appearance of the rival towns.—Their lumber-trade.—Advantages of Calais.—Stumpage in New Brunswick and Maine.—Why ships are built on the Calais side of the river.—Higher taxes in the States than in the provinces.—Cold whitish clay bottoms.—Why the settlements occupy the highest ground.—Selection of such spots, how made.—British and American Milltowns.—Execrable roads.—Bad condition of farming in Maine.—Lighter streaks and wedges in the clay banks of the St Croix.—Marriage ceremony.—Journey to Fredericton.—Mr Brown's stony farm.—Elevated flat swamp.—The Macadavic River.—Vail's opening or flat.—Coal-measure conglomerates and sandstones.—General character of their soils all the way to Fredericton.—Harvey Settlement of Borderers.—History and prosperity of this settlement.—Their early difficulties.—State of the English and Scottish Border peasantry.—Mr Grieves, a shepherd from Whittingham.—Mr Pass's opinion and experience.—Why emigrants are more industrious than their sons.—Acton and Cork settlements of Irish.—Idleness and discontent.—Stony table-land between Hanwell and Fredericton.—View of the River St John.—Unacknowledged obligations to my conductor.

ST ANDREWS, *Friday*, *Nov.* 9.—The town of St Andrews stands at the extremity of a peninsula, which stretches towards Passamaquoddy Bay, having the St Croix River, the boundary of the province, on the one side, and Chamcook Bay on the other. It is a well-built

small town, of two or three thousand inhabitants, clean, healthy, regularly laid out, with some good streets and some handsome buildings. Its lower part is situated on the banks of the river; but its cross-streets and higher part ascend a gently sloping red-sandstone hill, the summit of which commands an extensive view of the river and bay, and of the shores of the State of Maine beyond. It is a quiet place, apparently prosperous, but without any of the bustle of much trade or of rapid progress. It carried on a large traffic with the West India Islands before those colonies met with their late reverses, and before the lumber-trade to these islands was thrown open to the United States. Since the latter period, this trade, partly from the want of back-freights to provincial ports, is said to have fallen very much into the hands of the American shippers, and the colonial ports to have suffered in proportion.* Another cause of diminished prosperity to this place is the springing up of a rival town in St Stephens, fifteen miles up the river, and at the head of tide-water. A similar effect to that which the deepening of the Scottish river Clyde—so as to bring large ships up to Glasgow—has had on the commerce of Greenock and Port-Glasgow, has been exercised on the progress of St Andrews by the building of St Stephens at the head of tide-water, in the immediate neighbourhood of the saw-mills upon the St Croix, and where only a bridge separates New Brunswick from the State of Maine.

This promontory of St Andrews consists of red sandstones and marls, traversed by trap-dykes, proceeding most probably from Chamcook Mountain as their centre. The land is of a red colour, and, though frequently stony and expensive to clear, is naturally fertile, and capable of bearing good crops. There are no fogs here to interfere with the healthy growth of the crops, or with the

* Yet the city of Portland in Maine is said to have declined greatly from the failure of the same trade.

health of the inhabitants, the south-west winds of summer bearing them along towards the Bay of Fundy. The temperature is generally milder also, both in summer and winter, than in other parts of New Brunswick; so that fruits, such as gooseberries, which will not ripen at all, or ripen well, at Fredericton or St John, come to perfection about St Andrews.

Mussel-mud, as it is called, or sea-mud full of mussels, abounds in the Bay of St Andrews, and in some of the other smaller bays and creeks up the St Croix River. This is an excellent fertilising substance, either when made into a compost, or when put fresh upon the land, and ploughed-in in autumn. But the most apparently singular way of using it is to put it, with the mussels still living, into the turnip-drills, when it gives alone an excellent crop of turnips.

Sea-ware also—or *rock-weed*, as it is here named—is used as a manuring substance. Along our Scottish shores, where this substance is extensively used and highly valued, it is known that, though it raises excellent crops of potatoes, they are of an inferior or waxy quality. This is usually the case here also. But if the potato-seed is put into the ground, covered with three to five inches of earth, the sea-ware then laid on, and covered over with earth, lazy-bed fashion, the potatoes, according to Colonel Mowat, are not only numerous, but dry also, and mealy in quality. In large farming, this method would require to be in some degree modified, to admit of the use of the plough. At the same time, it may not be the method of using the sea-ware, so much as the greater depth at which, by so many coverings, the potato set is placed, to which the good effect is owing — since, other things being equal, it has been found elsewhere that, in dry sound soil, the deeper it is planted the mealier is the crop.

A railway has been projected which is to run from the sea at St Andrews to Woodstock on the St John River,

whence a branch is to be carried into Maine, while the trunk-line proceeds to the Grand Falls, and finally to the St Lawrence. Some steps have been taken to carry this project into effect by means of funds raised partly in England and partly in the province, and ground had been broken in the neighbourhood of St Andrews a short while before my arrival. This line goes through a thinly peopled, thinly cleared, and, for a large part of the way, a naturally sterile country, which, for many years, can afford very little intermediate passenger or goods traffic. There can be no doubt, however, that such a railway terminating at St Andrews would tend so much to revive its ancient prosperity as to deserve the most strenuous exertions of those who are interested in the town, in endeavouring to carry it into effect.*

The peculiarities in the winds at St Andrews exhibit a striking illustration of the benefit of shelter to the land, and of the evil effects which follow the indiscriminate clearing which, in most new countries, takes place, and of which I have already spoken when describing the shores of the Bay de Chaleur. A due north wind by compass is sure to bring rain. A N.N.E. wind is the coldest by the thermometer—what is called grey cold—but it is not the most unpleasant. The due south wind in winter, though not so low in temperature, is the most raw and chilling. It appears to come direct from the

* A correspondent in New Brunswick writes me, in regard to this line, (dated 30th November 1850,) that "ten miles of the St Andrews railway have been graded—the rails are about being laid—the company have offered to contract for buildings for a depôt, and the grading of fifteen miles more. They have obtained a grant of 10,000 acres of the wild-lands, consequent on the expenditure of £10,000, as stipulated in the act of the General Assembly." The completion of this, or of any other railway, must be of great benefit to the province, whatever return it may be found to give to the shareholders.

A new impetus has recently been given to the whole subject of railways in the colonies, by the convention held at Portland, and by the rejected "*European and North American Railway.*"

Gulf Stream. But the north-west wind is the highest, and most destructive to vegetation. When it drifts the snow off the ground, or sweeps over the land when bare, it actually *burns up* and completely destroys the grass.

These facts show the importance of belts of plantation to protect the fields, especially from the north-west wind, and of leaving such shelter when the original forest is cleared. They show also how important, in connection with scientific agriculture, is the study of that branch of meteorology which deals with the direction, prevalence, and temperature of the different winds in different localities.

A severe frost, after a partial thaw in spring, when the land is soaked with water, is here very destructive to the grass-land. The clover in April is sometimes thrown out, so that the roots will stand frozen and upright from four to six inches out of the ground! A liability to such alternate thaws and frosts in spring is the main reason, also, why winter wheat refuses now to grow in the more extensively cleared parts of the province.

This county is said to be much affected with the passion for Annexation. I did not meet with any at St Andrews whose professed inclinations lay that way, though one might expect that the neighbourhood of the State of Maine would inoculate the discontented and the lovers of change with that form of political disease. But the residents explain its existence in another way. Most of the immigrants who come here are of the poorer class of Irish, from the county of Cork. It is with these men, and from Ireland—so at least the descendants of the Scotch and English settlers, and of the old loyalists, say—that the disaffection to England has been mainly imported. To those who know the facts which I have stated in the preceding chapter, as to the material depression of Maine, it cannot be believed that by annexation the colony of New Brunswick could become more prosperous.

I staid only a few hours in St Andrews, during which

I was indebted for many civilities to the Honourable Mr Hatch, president of the county agricultural society, and one of the main promoters of the railway—when, bidding adieu to my kind friend the Mayor of St John, I started for St Stephens, along with my new friend Colonel Mowat. Steamers ply on the river between the two places, and the distance by water is considerably shorter; but, as I wished to see the interior of the country, we preferred to go by land.

For two miles after leaving St Andrews the red-sandstone soils continue, after which, all the way to St Stephens, metamorphic rocks prevailed, with their inferior slaty soils, their drifted slate gravels and stony slopes, their swamps and their cold light-coloured clays. The country rises into hills, and into low, sometimes isolated, mountains and ridges. The county of Charlotte, taken as a whole, is acknowledged to be poor and rocky, partaking generally of the character of one spot in it, which a humble Scotch settler described as a "scraggly hole;" and to the traveller it presents very few temptations to linger on his way, and few sunny spots which he could conscientiously invite the European emigrant to come over and possess. Instances of much energy, however, are to be seen, and wide fences of stones, testifying to the labour with which good fields have in some places been made out of the rocky surface. But, as at home, there are more cases of indolence, and in which labour is begrudged even to naturally fertile land. "My neighbour, looking over the boundary fence one day," remarked one of these improvers to me, "when he saw me engaged with three men clearing off those stones, sneeringly commented on my folly, adding, 'If there was not another foot of land on God's earth, I wouldn't take them stones off.'" I suppose it is to men of this indolent stamp that the proverb applies which I first heard used in this county—"One spur in the head is

worth two in the heel." If they had more knowledge, and fewer of the prejudices which knowledge would remove, they would of their own accord exercise more reasonably their wasting energies.

And yet there are patches of excellent land along the road to St Stephens, and some intelligent improving farmers, whom the want of time alone prevented me from visiting. Indeed, it is much to the credit of the county of Charlotte, that the oldest agricultural society of the province has its headquarters at St Andrews, and that in its neighbourhood live many persons who are most anxious to promote every branch of rural industry.

One of the greatest obstacles to good or extensive farming in this neighbourhood, is the difficulty of procuring good servants. Those who offer themselves for hire are the poorest of the southern Irish, who have never been out at service, or accustomed to regular work at home. "They have to be taught everything, and to be watched if they are to continue to do anything in the way you have taught them; and then, when by six or twelve months' drilling you have broken them into something, they go away and leave you."

We know how badly these people manage their own bits of land at home, and they cannot carry more knowledge or better habits with them to a new country. But the most amusing thing to an indifferent person is the airs they give themselves, on the very score "that they have never been out, or never brought up to service," and that therefore they are rendering you a great favour in taking service with you, for which, besides paying them, and bearing with all their provoking faults, you ought to feel yourself under an everlasting obligation. I was somewhat moved to indignation one day in Sussex Vale with the Irish servant of a friend of mine, who was driving me in his master's carriage, on his telling me, as it were apologetically for finding him

in such a situation, that he had not been accustomed to service at home, and that he wouldn't stay with his master, but that he was a very kind man—though his master had found him begging and in rags, and out of compassion had clothed and pampered him.

This is the same complaint which, in one form or another, we hear in all free North America. Irish or coloured people are almost the only servants to be procured. There are, indeed, so many outlets for superior industry and intelligence, and men are all so anxious to be their own masters, that necessity alone makes a man engage himself to another; and as soon as he thinks he can in any way better himself, he has no hesitation in trying a change.

There are meritorious points and things to be praised in this desire of self-dependence and advancement, but the want of heart and conscience it displays is not to be excused. I suppose it must have arisen from this conduct of those who serve, that among masters there is also a more pure selfishness in many cases, at least in New England, than is seen at home. I had occasion, while at New York, to speak in a merchant's office of the case of a young man who, after fourteen years' faithful service, and refusing, for his master's sake, more favourable offers, had been dismissed from his situation, with a good character, and without a reason being assigned. I observed that I should have thought such long service would have given the young man a claim to the consideration of his master. "Oh, sir," was the answer, "that goes for nothing here." One rarely sees in free North America that kindly and long-continued relation between master and servant which is the source of so many of our comforts at home.

Several small streams fall into the St Croix on the way to St Stephens, two of which, the Waweig and the Gallop, empty themselves into bays, or broad armlets of

the estuary of the main river, round which our road ran. Some good land skirts these bays, and abundance of fertilising sea and mussel mud fills their bottoms when the tide has retired. Oak Bay, into which the Gallop falls, is pretty. There is a village on its banks—scattered white houses around the curved shore—cleared and productive land skirting its margin—a distant background of high hills, abounding in wood—islands on its bosom — shipping at anchor on various points—and beyond the mouth of the bay, and across the broad river, the frontiers of another empire. With these materials, a little sunshine, a light heart, a pleasant companion, and the charm of novelty, the reader will easily make up for himself a pretty picture.

Before descending upon St Stephens, a more striking view presents itself. On the right, and sweeping far behind, is the semicircular Clendinning Ridge of trap-rocks, superior in soil, and cleared to the summit; while on the front and on the left are the rival towns of Calais and St Stephens, with their churches and their numerous whitened houses, on its opposite shores, embracing each other by a bridge across the narrowed stream where tide-water ceases. Of the two towns, Calais is the larger, has the greater number of churches and other public buildings, and by much the more numerous fleet of ships along its wharves and jetties. To a lover of progress, it will certainly be a pleasant sight, turning from stony barrens and difficult swamps, to look upon a scene of so much industrial life as the head of the broad tide-water channel of the St Croix River presents; and I longed as much to cross and examine Calais, and to compare it with St Stephens, as if I had not previously visited any of the many other flourishing towns of which the United States can boast.

It was nearly dark when we arrived in St Stephens; and found comfortable quarters in Dover Street—the

names of the town on the one side of the stream, and of a principal street on the other, carrying the mind far away, to scenes very different on the whole, but where frontier towns and rival populations were also *vis-à-vis* with each other.

I took a hurried walk along the river through a long street of St Stephens, and, after crossing the river, through a longer one in Calais. My general impression of the New Brunswick town was, that it exhibited greater signs of commercial activity and prosperity than any other in the province, with the exception of St John; that it had more of a settled and English character also; better and more numerous shops; and displayed a greater division of labour, so to speak, among the shopkeepers, than is to be seen anywhere else, except at Fredericton and St John. Calais appeared larger, and not less prosperous than St Stephens; while the more numerous shipping at its wharves showed it to possess some element of prosperity which was either wanting altogether to its rival, or was not possessed by it in an equal degree. The most imposing buildings in St Stephens are, its Episcopal and Presbyterian churches; in Calais, its Unitarian and Independent churches, and its newly-erected common school.

Saturday, Nov. 10.—The river St Croix—or Scoodic, as it is also called—communicates, through its many tributaries and interior lakes, with an extensive still-uncleared interior country, both in the province of New Brunswick and in the State of Maine. It is, therefore, the natural outlet for the produce of immense forests, and has hitherto been the seat of an extensive lumber-trade. This trade is the main source of the prosperity of these rival border towns, and it is the peculiar conditions of the two in reference to this trade that have hitherto given that advantage to Calais which, as I have said, its more numerous shipping especially suggests. A

hundred vessels are said to be sometimes lying at its wharves at once, engaged chiefly in the coasting trade, and making voyages of three or four weeks' duration.

There are, or were, two reasons why the trade of the river should be carried on from the American, rather than the British side, and why, as a consequence, the larger quantity of shipping should be found there.

First, The duties upon timber imported from the provinces into the United States being great, and especially on sawn or manufactured timber, most of the mills are situated on the American side; and it is so contrived that, in floating down the river, much of the timber that is cut in New Brunswick lands in Maine, and thus avoids the duty.

Many of the American lumber-merchants hold timber-lots in New Brunswick—tracts of country, that is, on which, for a certain payment, they have obtained the sole right of cutting timber. In New Brunswick, the Government charge for this right—here called *stumpage*—is very low, being only 10s. for a square mile, and afterwards 1s. a ton upon all wood exported. In Maine, on the other hand, the State charge for timber-land, or the stumpage, is from 10s. to 15s. a thousand feet for pine, and 5s. to 7s. 6d. for all spruce which is cut and sent to market; and this amounts, where the timber is good, to as much as £800 a square mile! This great difference in the price of woodlands, merely separated by a river, has naturally given rise to much eager speculation. Individuals have obtained large grants on the New Brunswick side for 10s., and have again sold them to merchants from the American side for several hundred pounds a square mile—making thus much money through an improvident regulation of the Provincial Legislature. The American purchasers contrive, in floating the wood down the head-waters, to put an American mark upon it, and thus save duty by landing

it on the American shores. In the State of Maine, such speculations in wood-land have long been a great source of mercantile competition and excitement. Many of their leading men have been involved in them; and they are said to have had a great share in the violence displayed by the people of Maine on occasion of the disputes in reference to the boundary with New Brunswick.

Second, Another reason is, that American ships bear a higher character in the southern ports, and obtain freights at New Orleans or elsewhere, in preference to Provincial ships. They can also be insured as American ships at a lower rate in Boston, than they can as New Brunswick ships at St John. Thus, it is for the interest of the St Stephens merchants to build their ships on the Calais side of the water. Though no better in quality, they are now American ships, and enjoy all the benefits in the ports of the Union which *bonâ fide* country ships possess. Were there as large a country, and as extensive and rich a seaboard behind St Stephens as there is behind Calais, this state of things would not exist; and although, on the whole, a very much wider field for commercial enterprise is presented to the British merchant in the vast extent of the home and colonial empire, yet, to a young and rising port, it is chiefly the coasting-trade which is of importance. The ability to build large ships, and to engage in foreign commerce, is a work of time, and is found only in places where considerable prosperity has already been attained, and considerable wealth accumulated.

The above circumstances explain why the shipping of the St Croix River should be found chiefly on the western side; but it is in favour of St Stephen that its taxes are lighter. I was informed that they were so in the ratio of 10 to 1—that a person who, in St Stephens, pays only 100 dollars of taxes would, with the same property, in Calais, pay 1000. This may be an

exaggeration, but there is no dispute, I believe, as to the fact that taxation, in all the States, is very much higher than in any of the British provinces.

Considerable smuggling of other kinds goes on along this river. It would be hard, indeed, to prevent it without a very large staff of officers. Flour is smuggled over from the western side, and British goods —after having paid the Provincial duties of 8½ per cent —from the eastern side. A good deal of reciprocal smuggling appears to be connived at on both sides of the border, and it would probably be difficult to say which shore has the advantage.

This forenoon was very wet and disagreeable, so that I could not take an extensive drive round the country, as I had intended. I was able, however, to make a short tour of six miles up the river, to what is called Upper Milltown; and, crossing the river there, to return down the Maine side to Calais. The land was generally a yellowish clay, covered with granite boulders. When once cleared, few stones come again within reach of the plough; but many fields I saw must have cost much time and labour to clear. Until drainage is introduced, these soils, even when cleared of stones, will always be difficult and uncertain to till. A whitish cold clay fills also the bottoms of the many small valleys or hollows with which this part of Charlotte County abounds. Being impervious, it there forms cedar and alder swamps, with mixed scrub-pine and hacmatac. I found it also in the low flat patches of intervale which bound the river below St Stephens. No shells were visible in it; but it had much resemblance to the post-tertiary clays of the river St Lawrence, and is probably of the same age. This clay struck me as peculiar to this part of New Brunswick. The soil it forms is almost as difficult and untractable, and certainly requires more skill to manage

it than the stonier surfaces that cover the mixed trap and metamorphic rocks of the county. Thorough-draining, liming, abundant gifts of vegetable matter, and much patient industry, will at a future time make them easily workable and productive in corn.

I found here prevalent an idea to which I have elsewhere alluded, that "the fervid suns of this climate do away with the necessity for thorough-drainage." This is a mistake: they rather make such drainage more necessary. These fervid suns bake and harden clay soils, and make them not only difficult to work, but incapable of ministering to the growth of almost any of our crops; and it is one of the beneficial influences of this species of improvement that it brings the soil into a condition in which it does not bake, harden, crack, and yawn under a hot sun, and so permits the roots to descend further, beyond the reach of its burning rays, and to derive nourishment from the still moist and rich soil below.

On the rising-grounds and ridges, the subjacent clay is covered by drifted slate-gravel, more or less mixed with fine earth, which forms a dry, easily-worked, and manageable soil. Hence, the tops of the ridges are the seats of all the settlements in this part of Charlotte County. Nearly all the hill-tops are cleared and settled, while the slopes and bottoms are still in wilderness or in swamp. These slopes and bottoms are often very stony, and sometimes so much so as absolutely to defy the hand of industry to reclaim them. The boulders are chiefly granite; and the yellow clay is probably derived from the decay of a felspar rock.

The Mohannas Settlement, about five miles above St Stephens, is on such a ridge. I drove up to one of the farms, to satisfy myself by inspection of the reason why it occupied only the highest ground. I found it a gravelly soil of slate-drift of all sizes, evidently easy to

work, and well adapted for barley, turnip, and potato crops, though less suited to grass. The fields over which I walked were undulating and picturesquely situated, having a wide view along the river, and over the cold clay wilderness below. To a stranger, it seems at first very remarkable how, out of the continuous primeval forest which once covered the whole region, settlers should have been able to select for cultivation such rarely-occurring more available spots as these, from the midst of stony and stiff clay-barrens and prevailing swamps. It is only after he learns to understand the indications of the different species of trees which compose these forests that he begins to understand how, to the pioneer in the wilderness, the broad-leaved trees of various kinds speak an intelligible language, and beckon him to the sites on which they grow, as possessing the qualities he wishes for in the land upon which he would choose to settle.

About a mile and a half above St Stephens is Lower Milltown, which is a large thriving village—indeed two villages, as there is one on either side of the river; and four miles higher is Upper Milltown, where there are also two opposite villages. These villages are established on the falls of the river, where the mill-power exists. There are many nice houses in them and along the way-side, and evidences of much prosperity and of a large mill-trade on both banks of the river. Those on the New Brunswick appear quite as flourishing as those on the Maine side of the stream.

On crossing into Maine, and proceeding through the mist and drizzle back again towards Calais, my recollection is very vivid of the execrable condition of the roads. Nowhere in the two thousand miles I had travelled in New Brunswick had I seen the roads so difficult to travel on. Deep ruts, heavy mud, and large pools almost covering the road, compelled our willing horse to linger. To the wet weather, the clayey material of

which the roads were made, and the numerous lumber-carts which pass along them at this season of the year, were ascribed this scarcely-passable condition.

The farming in Maine appears no better than in New Brunswick, and I was sorry to learn that the farmers themselves were far from being in a prosperous condition. Two-thirds of them, I was told, were on the eve of bankruptcy. Like those of New Brunswick, I believe, many have engaged in lumbering; and, notwithstanding the supposed more favourable circumstances of the United States lumber-merchants, like them have suffered loss instead of making money by it. Had the day not been so impractically bad, it was my intention to have driven up to two or three of the farms we passed, with the view of learning more as to the condition of the rural proprietors, and more accurately from them than I could hope to do from persons belonging to the opposite side of the river.*

I have already mentioned that sheep and cattle from Nova Scotia supply the markets of St John, and that the shipping in that port are victualled with New England beef. On the St Croix River, the home produce from either side is unable to meet the demands of the shipping, and droves of cattle come from Massachusetts to make up the deficiency. The feeding of cattle, as I have already observed, is a branch of husbandry to which hitherto scarcely any attention has been paid in New Brunswick, though it is the basis of high and profitable farming.

At low-water, I walked along the flat intervale which skirts the river below St Stephens. This intervale, and the bed of the river itself, underneath the more recent mud, and as far across the channel as could be observed,

* The allegations made by the people of Maine themselves, in the petition to the State Legislature, from which I have quoted in a previous page, show that the information given me on the spot was not far from being correct.

consists of a stratified, light-coloured, yellowish clay—such as I have already spoken of as filling the hollows in this county—not of recent deposition, and penetrated throughout with long vegetable roots, as one might suppose the fire-clays of our coal-measures to have originally been. A section of eight or ten feet in depth was visible in some places, and in the mass appeared whiter lines, or vertical plates and wedges—sometimes edged by browner, more ochrey margins—parallel, transverse, straight and curved, and running into each other. These had evidently been formed by the filling up, with a whiter or browner material, of the cracks which had naturally formed during the original drying of the clay. The farmer of our stiffest English clay-lands (undrained Oxford and Weald clays, for example) is familiar with cracks three or four inches wide in long droughts, and to the bottom of which his stick cannot reach. In clays newly deposited, therefore, cracks may be much wider and deeper, especially where a hot sun daily beats upon it. The filling up of such cracks by after floodings, or by natural rains or springs, is the cause of the appearance I am now describing.

It is not difficult to understand that white and other coloured streaks, crossing mica-slates and other metamorphic rocks, may also have been derived, in some cases, from infiltrations like these; and that, even in metamorphic granites, the occurrence of streaks and veins of a different colour by no means *necessarily* implies that melted matter of a more fluid kind has been injected into the cracks and fissures of cooling or of previously existing granite. A clay such as I have described, if subjected to gradual metamorphic action, might produce in its mass a granite somewhat different from that which would be produced by the vertical plates or wedges with which the cracks had originally been filled up.

Nov. 12.—I yesterday attended service in the Epis-

copal church, along with a thin congregation. The clergyman, Dr Thomson, had been in St Stephens for twenty-seven years, and assured me he liked the winters of New Brunswick better than those of his native Ireland.

In the evening, I assisted at a private marriage performed in his study before witnesses from his own family. The parties came quite unattended, and such things he informed me often happened. Without any notice, two people drop into his house, produce a license, and are forthwith married without any further ceremony.

The license bears to be from the governor, and not from the bishop. The clergy of all persuasions are entitled to marry, but they do so according to a fixed form, which each sect has been obliged to draw up and submit to the approval of the Provincial Assembly.*

The morning was still misty and disagreeable, with occasional drizzly rain; but with a one-horse waggon, and a sharp St Stephens bailiff for my driver—a north country Irishman who had been long in the country—I started early on my way to Fredericton, a distance of about seventy-five miles. There was in this tour little to interest me, after what I had already seen of the county of Charlotte. The cold light-coloured clays, covered at times, and on the tops of the hills, with a gravelly slate-drift, lighter and more easily tilled, formed the available soils; while extensive flat bottoms, covered with beds of gravel or with cedar-swamps, occurred at intervals during the first eighteen miles. The three broad ridges of Tower-hill, separated by deep valleys, the first of which we crossed about seven miles from St Stephens, made the road heavy to pass. On this first ridge is the house and farm of my former travelling-companion, Mr Brown. I paid a short visit to his family in passing; and in front of his house, though on the opposite side of the road, I saw one of the stoniest fields I

* Gessner.

have ever met with. It was literally paved with huge blocks, and was kept untouched as a monument of what the whole had been. It must, I suppose, have been the industrious perseverance of my friend Mr Brown, in making a farm out of such unpromising materials, which caused his neighbours, twenty years ago, to force him from the tail of the plough, and, in spite of opposition, send him to the House of Assembly every year since. "We don't want educated men for legislators, or men specially instructed for them, to fill our public offices," say the democrats of North America; and they point to such men as Mr Brown. "You see he was taken from the plough-tail, and is still a poor farmer, and yet he does as well, and holds as high a place as any of them."

These three Tower ridges are extensively cleared and settled. Wilson's inn, which is about a mile beyond them, and eighteen miles from St Stephens, is at the junction of the St Stephens road with the high-road between Fredericton and St Andrews. From this point the road is bad, and for the most part through an uncleared wilderness of slate-country. After about six miles, we crossed Jones' Brook, a feeder of the Digdiquash River, and ascending a long hill, came upon a flat table-land, from which the water appears unable to escape. It forms several miles of a deep bog and cedar-swamp, through which flows the Deadwater Brook—a deep, black, sleepy stream, winding along the flat with scarcely any apparent motion. This flat swamp extends a great many miles to the right and left, but is only a few miles wide, occupying the space between the feeders of the Digdiquash and those of the Macadavic rivers. It struck me as very remarkable, that so much water should be able to rest on so narrow a flat between two rivers running at so much lower a level. But New Brunswick, as we have already seen, is distinguished for the numerous separate tracts of almost perfectly flat table-land of all qualities which it possesses.

It will be one of the triumphs of some future Administration of the province, that by arterial drainage it has laid dry these naturally swampy tracts, and given to the labours of human industry the available land which they all contain.

Having crossed this belt of swamp, we passed the Trout Brook, a feeder of the Macadavic, and, descending towards this river, drove for a couple of miles along a cleared upper intervale of granitic sand to Vail's, about thirty miles from St Stephens, where we stopped to bait.

We were now on the banks of the Macadavic, a river near the mouth of which, at St George, I had spent part of the previous Friday. At this point, and for some distance above and below, a broad space intervened between the hills on both sides. This space was occupied by marshy islands overflowed by the river in floods, but from which Mr Vail yearly obtained much of his winter's hay—of a small portion of dry intervale land of good quality, from which good crops of grain were obtained—but chiefly of an extensive low flat swamp of stunted pines, which, if cleared, was naturally too wet for cultivation. At a higher level was the second intervale of sandy soil, along which my road had brought me, and upon which four or five farms had been cleared, but which required some attention to manure, if regular crops were desired from it.

While my horse was baiting, I crossed the river and walked forward over the mile of flat swamp which intervened between the river and the hills, and over which the road ran. The last rocks I had seen were slates more or less metamorphic; but when I reached the steep hill, I found myself at a lofty escarpment of grey sandstone conglomerate, the base on this side, as I believe, of the New Brunswick coal-measures. I saw no rocks in place beneath the grey conglomerate; but my time did not admit of much search. Vail informed me, however,

that there was limestone in the flat swamp, at some distance from the road. On the top of the hill I passed for some distance patches of red drift, in connection with which a drifted mass of gypsum had been met with. I infer, therefore, that this broad swamp between the hill and the river represents the former site of, or now actually covers, the soft red rocks, the red marls, the deposits of gypsum, the limestone, and perhaps the red conglomerate, which, in this order, are found beneath the grey coal-measures of New Brunswick. A search through the woods would probably discover traces of them; and such a search may be rewarded by the discovery of tracts of available land now hidden in the wilderness.

After ascending the hill, the same grey conglomerate, or grey coal-measure sandstones overlying it at a low angle, formed seven miles of a stony pine-clad wilderness table-land, before we came to a few miserable clearings on soil which, during the present arid season, had yielded most scanty crops. Grey sandstones, for the most part thinner bedded, accompanied me afterwards—forming, with occasional exceptions, poor and stony soils—all the way to Fredericton. The surface of the harder of these rocks, when they come occasionally to day, and are uncovered by drift, exhibit the grooves and polish usually attributed to the action of currents and icebergs during what has been called the diluvial or drift period.

One of the exceptions to the general poor character of the land is seen at the Harvey Settlement, about twenty-five miles from Fredericton. This settlement, named after Sir John Harvey, who was governor at the time it was commenced, is now one of the most flourishing in the province. It was formed in the summer and autumn of 1837, by a number of families who came from the neighbourhood of Wooler in Northumberland, after some arrangement with the officers, and for the purpose

of settling on the lands of the New Brunswick and Nova Scotia Land Company. On their arrival at Fredericton, however, in July 1837, they found no preparation had been made by the Company for their reception or location. Being poor, they were at once thrown upon the public bounty; and though a few got employment, yet the great bulk, both of the men and of their families, were soon in distress. The Legislature, therefore, at once assigned to them the tract of land they now occupy, furnished them with supplies, and appointed a commission—at the head of which was the present Attorney-general—to assist in arranging the division of the land, and other necessary matters.

At first, twenty-three families, comprising about two hundred individuals, were located; and though they endured many hardships, especially during the first winter, yet only two deaths occurred among them all for six years after their arrival, while there were thirty-nine happy births without medical aid. There are now fifty-three families of them, counting in all between three and four hundred souls, each family owning from three to five cows, and a hundred acres of land *at least.*

The cultivated land of these numerous farms lies on a succession of low ridges, between which cedar-swamps of greater or less extent intervene, and interfere both with regular clearing and cultivation, and with the continuity of farms. I stayed over night at this settlement, in a comfortable little inn kept by a Mr Cockburn, who had several sons grown up, all of whom but one had already left him, and settled on farms of their own.

Nov. 13.—A second tier of lots—a second concession, as it would be called in Lower Canada—has been taken up and settled behind the farms first laid out here, along the high-road. The families of the old emigrants of 1837 are now becoming straitened for room. They complain bitterly that all the good land within imme-

diate reach has been granted to speculators, who hold it from year to year to get the benefit of the increase in value which arises from the settlements made all around them. For the good of the province, such parties ought certainly to be compelled either to improve so much within a given time, to pay a tax to the local funds, or to sell at a fair price to those who would improve.

Behind the second tier of farms are extensive carriboo plains and pine-swamps as far as the Magadavic Lake; but, exploring in search of good land, the young pioneers of the settlement have discovered a tract of rich hard-wood land in the midst of the wilderness beyond this lake, to which there is at present no access for want of roads, and no facility of settlement, because of its present remoteness from all human habitations. It is by such explorations, the results of natural expansion, that the better lands are discovered, and the means of successful extension afforded to the families of the older settlers.

Wheat is sown in this settlement among the stumps on the burned land. It gives twenty bushels sometimes; but if it give ten bushels, it pays them for the little cost incurred with these first crops. Oats and potatoes are the principal produce; and since good mills have been established, the settlers have begun to consume much oatmeal. They are already celebrated for their Timothy seed, which they grow very pure. In 1848 they sold nearly eight hundred bushels, at 14s. 6d. a bushel; but, to the discredit of the province, which ought to have bought it for home consumption, it was carted fifty miles to Calais, and there sold for transport to the Boston market.

Though prosperous now, these settlers, as is the case with all poor settlers, had many difficulties at first, and among others that of having no roads—which those who followed them did not, and do not now anywhere experience in an equal degree. A barrel of flour, which

now costs only 4s. to bring it from Fredericton, a distance of twenty-five miles, then cost them 19s. As they expressed it to me, "A man must work as hard here as at home, and longer hours. He must build his own house, make his own family's shoes, and do many other things. A useless man need not come here." Yet, they added, if a piece of good land was to be got handy, many of their friends were ready to come from home to join them.

In the middle of last summer, I made a short visit to the beautifully farmed country which lies between Cornhill and Yetholm, at the foot of the Cheviots, on either side of the Scottish Border, and near the paternal home of these Harvey settlers. It is a pretty country, at such a season of the year, for the lovers either of the picturesque or of fine farming, to visit. In the small village of Yetholm I found, by the report of the parish minister, that there were no less than thirty able-bodied men, accustomed to work on the adjoining farms, who were then unable to procure a single day's labour. Alarmed by the fall in the prices of grain—foolishly so, I think, on the part of farmers in such a half-pastoral district as that—the holders of the land had ceased to employ a single labourer they could dispense with. How the country suffers from this, besides the individual privation and misery it occasions! Every one of these patient intelligent men who emigrates is a loss to his country; and yet, I thought, how much more happy and permanently comfortable would those now idle men be, were they situated with their families on little farms of their own, like their old neighbours now settled at Harvey. Had I known of a bit of good land "handy" to that settlement, I could have felt in my heart to urge them to make up a party among themselves with the view of going there, and to offer to aid them in their views. Every one

such man would be an invaluable gain to the province of New Brunswick.

The settlement has its school and a permanent schoolmaster—an intelligent man, with whom I had some conversation—not overpaid, nor above the necessity of mending his own clothes, and making shoes for his family. It has regular visits, also, from a Presbyterian clergyman, and was about to build a church with the view of securing his resident services. It has now also its own corn-mill; and all this where, only twelve years before, was an unexplored wilderness. How much a small knot of industrious men, without capital, and without the aid of a rushing immigration, such as pours into the North-western States, may, even in unfavourable circumstances, in a short period effect!

I conversed with two of the settlers as to their own history and progress.

Mr Grieves was a shepherd at Whittingham, on the Border. He landed at Fredericton, in 1837, with a family of ten, and with only 7s. 6d. in his pocket. He did not come out immediately to Harvey along with the other settlers, but having received his grant of land, he hired himself as a farm-servant to Colonel Shore at Fredericton, at £30 a-year; and such of his children as could do anything he hired out also. Supporting the rest of his family out of his earnings, he saved what he could; and whenever he had a pound or two to spare, he got an acre or two of his land cleared. In this way he did good to the other settlers, by bringing some money among them and giving a little employment. At last, four years ago—that was, after seven years' service—he came out, and settled on his land himself, building a good house for his family *right away*—that is, without the previous erection of a log-house, as is usually the case; and a very good house he appeared to have. He now owns seven hundred acres of land

in different lots, and has clearings of twenty acres on each of three or four of these farm-lots, intended for his several sons, who appear to be as industrious as himself.

When I asked him how it was that he appeared to have got on better than the rest of those around him, he said, "he and his family had saved it off their backs and their belly." But he added—and it really moved me to find here lingering some heart and gratefulness still for kindness conferred, among so many who are filled only with grumbling and discontent—"Few have had so good a chance as I had, sir, or have met with so kind a master." I afterwards had the pleasure of meeting that master at Fredericton, and found him as grateful for the warm attachment and zealous service of so good a hind. I can well fancy a *canny* Northumbrian shepherd, with his thriftily brought up, obedient, and respectful children, gaining friends in New Brunswick, and thriving as Grieves has done. "Had I my life to begin again," he said, "I would come out here; for though I might not have more comfort myself, there is the satisfaction of providing well for my family."

Mr Pass was a different character. He was an Englishman from a more southern district, and had been the manager of a chemical work in some of the midland counties. He had saved £150, brought up his only son as a carpenter, and then came out six years ago, and settled at the northern end of Harvey. He had done well, he said, but through hard work; and all who have done well say the same. He considered himself better than at home, and that no climate could exceed that of his new country. It is especially the place for the labouring man, for he cannot *worser* himself; and, if he is industrious, is always getting better. This, in reality, is the great charm of these new regions, that the poor man, from the moment he places his foot in the country, *if he be industrious*, is constantly ascending the ladder, and is

cheered by increasing prosperity. But after he and his sons have attained to competence, and the stimulus to great exertion ceases, the progress is not so rapid, and a man cannot himself, or through his sons, progress indefinitely in wealth and station, as at home. At least it is not done, and a kind of listlessness creeps over the second or third generation—the provincial-born—which has given rise to the no doubt well-founded remark to which I have already adverted, that the new immigrants are more energetic and industrious than the native provincials. Why is it so? One reason assigned here, as in other places of which I have spoken, is that, so long as you till your own land, or work at it along with the two or three men you employ, the cultivation in the Provinces, as in the States, is profitable; but that, on a larger scale, farming is not profitable. This is a very general belief in north-eastern America, and, if true, satisfactorily enough accounts for the greater industry and energy of the poorest, and the slackened exertions of the better off. But is the unprofitableness of more extensive farming a necessary or unavoidable thing? This question is a very important one, both to the colony and to intending emigrants. I shall discuss it in the succeeding chapter.

Leaving the Harvey Settlement, on my way to Fredericton, three or four miles of wilderness brought me to the Acton Settlement, which is six years old, and consists of twenty families of Irish. The front lots are occupied by Cork men, Roman Catholics; the rear lots by Protestants. James Moodie, one of the latter, described them as thriving and contented. He owned three hundred acres. He wished to have farms for each of his three sons, and as soon as they saved £15 among them, he bought another one hundred-acre lot.

On a ridge to the right is the Cork Settlement, six miles from that of Harvey. It consists entirely of Cork

men, who have not prospered as yet. According to Mr Pass, the south-country Irish are the poorest men that come out—do the worst, and are the least contented. As at home, they depend upon grants, and charity when they can get it, more than upon their own industry. Many of them had gone into Maine, thinking to better themselves; but they found out their mistake, and had all come back worse than they went.

On the other hand—located in a hut at the cross-roads between the Acton and Cork Settlements, weaving, with the aid of his daughters, a home-spun web for one of his neighbours, and, though a professed tee-totaller, not disdaining to make a penny by selling drams—I found one of these Cork men, in *propriâ personâ*, who had a different tale to tell. He had been a schoolmaster to them, but found it a starving business, as they were all steeped in poverty and debt; and yet they were industrious, he said; and therefore he inveighed against the mother country for not making railways in the province, and sending out money to employ the people. The management of the Irish is still a problem, when unmixed with other population, in whatever country they are. Here was this fellow—M'Mahon by name—unsteady and in debt himself, trying one shift after another, as those who have been unaccustomed to steady labour at home do, industrious after a fashion, but unable to see that it is the persevering industry of the Scottish, English, and Protestant Irish settlers, that *makes the luck* for which they are envied. This man was a great talker, an encourager and spreader of disaffection among those who would gladly, as they sat idle, ascribe their misfortunes to any man or thing but to themselves. As at home, they get together in junketing and merry-making, and estimate the happiness of a spree far above the every-day comforts of clean well-furnished houses, and plentiful meals all days of the

year. But mingle these same men in twos and threes among a great predominance of a steadier race, and the restraint and influence of new example makes their children steadier men than their fathers, and more reasonable and contented citizens.

At the Hanwell Settlement, also Irish, and less prosperous and extensive than the Harvey, I did not linger. It is within eight or ten miles of Fredericton, and on inferior land. The grey sandstones—in fact, a sort of stony wilderness—continues thence the whole way to Fredericton. Everywhere blocks of drifted stone and rock strew the surface, or are seen *in situ*. Beneath the drifted grey rocks, an admixture of red matter was visible in the soil—the *debris*, no doubt, of red marl rocks—towards the north or north-west. Were the superficial stones removed, there are many places where this red material is in sufficient quantity to form a productive soil; but it will be long before labour can be profitably expended in clearing a stony surface like this, which seems almost to set the reclaimer at defiance.

From the high ground above Fredericton, I again felt how very delightful it is, after such a journey as this, to feast the eyes, weary of stony barrens and perpetual pines, upon the beautiful river St John. I thought it, on this occasion, one of the finest rivers I had anywhere seen. Calm, broad, clear, just visibly flowing on, full to its banks, and reflecting from its surface the graceful American elms which at intervals fringe its shores, it has all the beauty of a long lake without its lifelessness. But its accessories are as yet chiefly those of nature—wooded ranges of hills varied in outline, now retiring from, and now approaching the water's edge, with an occasional clearing, and a rare white-washed house with its still more rarely visible inhabitants, and stray cattle. These differ widely from the numerous craft and massive

buildings, signs of art and industry, which strike the traveller's eye, when, leaving Cronstadt behind, he ascends the narrowing Neva. Yet, in some respects, this view of the St John recalled to my mind some of the points on the Russian river: though among European scenery, in its broad waters and forests of pines it most resembled the tamer portions of the sea-arms and fiords of Sweden and Norway.

I reached Fredericton about four in the afternoon, and there found my conductor, besides making me pay very high for his services, most anxious—like so many others of these provincial people — to persuade me that he had done me a great favour besides, in bringing me, and that I was obliged to him in a degree for which my money was no compensation. He could have made more at his ordinary occupation of serving writs and seizing debtors, and it was only to oblige my friends he had brought me at all. I could only regret that my friends should have induced him to do what was so much to his disadvantage, and assure him, that having paid his exorbitant demand, I considered I had discharged every sort of obligation I owed him. This sort of thing, in one form or other, the traveller will often meet with in all these new countries; and not least frequently among those who have still a trace of the Irish "never went to service at home, sir," remaining in their heads.

CHAPTER XXI.

General remarks on the province of New Brunswick.—Want of frankness in the people. — Official staff in the province. — Provincial salaries.—Ultra-liberal speech.—Tendency to discontent.—Responsible government.—Accepting inferior offices.—Society at the "Little Court" of Fredericton.—Cathedral and College.—Relative numbers of the religious sects in the province.—Position of the English Episcopal church.—Tractarian element.—State of the University.—Alleged grievances. — Merit of its founders. — Necessity for positive and material instruction. — Resources of the Province. — Quality and quantity of its several soils.—Quantity of food, estimated in oats and hay, which the several soils and the whole province is capable of producing. — Population it is able to sustain.—Relation of the supply of fossil fuel to the possible population of a country.—How it affects New Brunswick. — Importance of early determining the extent and position of available fossil fuel.— Average produce of different crops in the whole province. — Compared with Great Britain and Ireland.—Compared with New York, Ohio, Canada West and Michigan.—Climate does not lessen the productive capability of the Province.—Effect of the winter's frost.—Length of the agricultural year.—Average prices of grain in the province.—Compared with Canada West and Ohio.—Will it pay to farm in these provinces by the aid of hired labour?—Opinions of the best practical men.—Who ought to emigrate to this province.—People who *may* go out.—Procedure of parties with different amounts of capital.— Not the country for large landholders. — Grants of land on condition of making the roads. — How bodies of emigrants might be located.—Amount of immigration to New Brunswick. — How people are induced to emigrate. — Letters from relatives. — Transmission of moneys by Irish emigrants.—Proportional emigration to Canada, New Brunswick, and New York. — Indirect value of settlers to a new country.—Commercial depression.—Exports and Imports of the port of St John, compared with those of all Maine, Vermont, and New Hampshire united.—Patriotic feelings of the members of the Provin-

cial Legislature.—Bounty to agriculture.—Improvement of the St John River.—Construction of railways.—Their desirableness.—Evil done by agitators.—European and North American Railway.—Emigration steamers.—Timber-duty grievance.—Mr Brown's address to the Legislature.—Fiscal protection not required by New Brunswick.—Common school education.—Improvement of the criminal code.

I REMAINED at Fredericton for upwards of six weeks, occupied in putting together my notes and impressions of the province, into the form of a report to be presented to the Provincial Legislature. I shall therefore devote the present chapter to a few observations regarding New Brunswick, which will not be unacceptable to those who desire to obtain an accurate general knowledge of its character and capabilities.

Among the early impressions made upon my mind, on mingling with the provincials, and which was not by any means dispelled when I came among the people of New England, was the want of English frankness and openness of speech, which marks their mutual intercourse, as much even as their conversation with foreigners. There was manifestly a species of *reticence*, as if, in what he said, the speaker reserved an *arrière pensée*, in regard to which he did not wish to commit himself, or as if he thought some eaves-dropper were listening to catch his words.

Another thing which soon arrested my attention was the extensive state and departmental machinery established and sustained among a population of two hundred thousand souls—a Governor, Executive Council, Legislative Council, Assembly, Higher and Lower courts of Justice, Bishop, Chief Justice, Master of the Rolls, Provincial Secretary, Attorney and Solicitor Generals, a Surveyor-General's Department, Colleges, Schools, Roads, Customs Department, &c., &c.—a whole host of men and departments, all sustained by this small community. Men with high names I saw — which, in England, command

deference and respect — enjoying neither the social position nor the consideration which the name implies at home, and yet for these names opposing parties struggling as bitterly, or more bitterly, than with us.

The consequence of this disproportion between places and people has been, that the salaries of office—at first large, when the offices were filled with educated men brought up at home with English ideas—have from time to time been reduced, till now a Provincial Secretary and an Attorney-General, with £550 sterling a-year, and a Solicitor-General with £200, represent the kind of position to which the highest talent employed in the public service can now attain; and the tendency is to still farther reductions. It illustrates very strikingly the simplicity of the provincial farmers, living remote from towns and rarely seeing money, that one of the shrewdest and now most influential of their body, in his place in the House of Assembly, once declared, "that, with the utmost stretch of his imagination, he could not comprehend how any man could possibly spend more than £300 a-year!"

It has often been remarked with how little talent the world is governed, and history has certainly shown that the cleverest men do not always make the best rulers; and, in republics, they are often the most dangerous men to rule. If, therefore, small emoluments will secure that moderate amount of talent which will keep the public wheels most regularly moving, the greater the economy introduced, the better for the people. I speak at present only of the impression which such a state of things produced upon my own mind. A great official designation did not carry with it the same meaning to the mind of a provincial as it had been accustomed to do to my own; and the actual position of official men in the provinces would probably to him appear no way anomalous.

The ultra-liberal and democratic tone of feeling and

conversation, among all persons and all classes generally in these provinces, also struck me. This appeared the more peculiar, as, after my visit to New England, I was sensible that in these respects the same classes in the provinces went greatly beyond the mass of their neighbours in the older States. Along with it there was also, in New Brunswick and elsewhere, especially in the towns, evidences of discontent—in fact, a tendency to it, and, as I thought, to unreasonable and unfounded complaints against the mother country. The reduction of salaries effected by the Provincial Legislature had created great dissatisfaction among the older officials, brought out or appointed from home, but paid out of the provincial purse. These gentlemen thought the Home Government should have protected them from such reduction, and at all risks. The opponents of responsible government, as it is called, which had lately been conceded to the colonies, were dissatisfied, maintaining that a large majority of the people did not wish or care for it, and therefore the Home Government ought not to have conceded it. But these men did not consider that it is the public voice of a colony only, expressed especially by its Legislature, which the Home Government can judge by, and that the silent and indifferent utter no voice. If ten thousand of the New Brunswickers demanded repeatedly and loudly a certain change, and the mass of the people make no effort, and express no opinion on the other side, the Home Government would feel called upon to do something to quiet these men—and the more especially if the thing demanded, as in the case of this responsible government, was in consonance with—was, in fact, only an extension to the colonies of—the principles of the British constitution enjoyed by us at home.

It is strange, though not unaccountable, how every party in these colonies makes the mother country the scape-goat in all their quarrels and mutual defeats, and

how, at the same time, both in the provinces and States, the home or British born, when they have or fancy a grievance, either public or private, become the loudest and bitterest against their dishonoured mother.

It is the new convert, or the renegade, who is always the most zealous.

A circumstance which first struck me in New Brunswick, but with which I afterwards became more familiar in the States, was the acceptance of inferior offices, in rank and emolument, by those who had long held the highest offices their fellow-citizens could bestow. It was obvious that the ideas as to what it was beneath a man, in certain circumstances, to do or accept, were very different here from what they are among ourselves. It is easy to see, indeed, that, where public functionaries are poorly paid—are appointed only for a time, and have no retiring pensions—necessity may compel the ousted party to descend and gladly accept an inferior appointment; and where such a necessity presses upon great numbers at once, it will soon banish fastidiousness, and create a new public opinion, sanctioning in all and recommending the course it compels.

The society at the "little court" of Fredericton, as the St John people sneeringly call it, consists of the officers of state and of the garrison, of the clergy, the judges, the professors of the university, the Government *employés*, the medical men, and a few resident gentry and local merchants, and, during the sitting of the Legislature, of the members of the Legislative Council and of the Assembly. It is a quiet place to live in, without any great variety, and with the usual cliques, parties, discontents, and private squabbles and backbitings to which all small towns are liable.

Among the public buildings there are two which will attract the stranger's attention—the new Cathedral and the University. The former, still unfinished at the

period of my visit, has been erected through the exertions of Dr Medley, who was consecrated the first bishop of Fredericton in 1845; the latter was established in 1828, during the governorship of Sir Howard Douglas. Both of these buildings are connected with shades of public opinion at present in a progressive state.

The prevailing denominations of Christians in New Brunswick are those of the Church of England, the Roman Catholics, Presbyterians, Methodists, and Baptists. Their relative numbers are not precisely ascertained, but the general attendance at places of worship is stated to be, among the

Roman Catholics, . .	32,300
Wesleyan Methodists, . .	24,400
Baptists, . . .	19,290
Presbyterians, . . .	8,930

Were these numbers taken to represent the relative proportions of the Roman Catholic and Protestant sects, they would give too high an estimate for the former.

The clergy of the Church of England are principally supported by the "Society for the Propagation of the Gospel," and their incomes vary from £200 to £300 a-year currency; those of the other denominations are supported by their respective congregations. The position of the Church of England in the colonies is rather anomalous, and is the cause of considerable jealousy on the part of the other denominations. It is in some measure established, and has a lead in New Brunswick, and the Bishop takes precedence after the Lieutenant-governor and Commander of the Forces. But it is not established by provincial law, has no provincial endowments, and performs none of the functions of an established church in the province. The Bishop, since his appointment, has been very zealous in placing more clergy and building more churches; but these clergymen, not being sustained by the people to whom they

minister, have not that hold upon the affections of their congregations which the reciprocal bond of giving and receiving begets among the other denominations. The united strength of these latter, therefore, has been for some time exercised to deprive it of all distinctive honours or privileges in the colony; and it is easy to perceive that they will ere long prevail. The Tractarian element—chiefly, I believe, since the arrival of the Bishop—has also been introduced as an element of division among the Church of England party, and has tended to repel from its communion the more purely Protestant portion of its members.

The University has been to the colony another source of angry feeling and strife. The Methodists possess their own flourishing academy at Sackville, and the Baptists their seminary at Fredericton, erected and supported by the funds of their respective communions. The University of King's College was built at the public expense, chartered as an Episcopalian institution, and endowed with six thousand acres of land and £2000 a-year in money. Jealousies arose soon after its foundation, and complaints on the part of the Presbyterian and other bodies. The charter has finally been made more liberal, so as to admit members of all persuasions into the governing council. But the Bishop is still president, the system of instruction is still modelled after the older English universities; and in so far as I was able to understand the present wants of the people of New Brunswick living in an undeveloped country, and the nature and plan of studies in the College, I must sympathise with the many who think that it is still not such an institution as the province requires, or such as, in return for the money paid to it, the people ought to possess.

Besides its alleged sectarian character, and especially since economy has become so popular, this college is represented to cost more than its labours are worth. A

college and university with fifteen students and large endowments! "The funds are sufficient," said a leading member of council to me, "to send all the students home to Oxford, and educate them as gentlemen-commoners." One cannot wonder that, where money-incomes are so small, this great cost of an education given only to a small number of young persons of one denomination—for few but members of the Church of England yet avail themselves of its advantages—should add to the other causes of its unpopularity.

Yet the establishment of this university on its present restricted basis was a natural, and, as very many will consider, a commendable act on the part of its first founders. The early settlers—at least such of them as had anything to say in the management of provincial affairs—were nearly all gentlemen, men of education, merchants, and others, whom loyalty brought from the United States at the close of the War of Independence, or whom large grants or public appointments induced to come from home. These men, seeing their sons growing up, and the sons of others, who had already grown up, roughening and becoming rude in the absence of the educational advantages they had themselves enjoyed, naturally availed themselves of the earliest opportunity of supplying in the province what they could not send their sons to England to procure; and it was just as natural that the institution they founded should be framed after the model of those famed seats of learning at which they and their fathers for generations had studied, and where they themselves had spent so many happy days.

Nothing was more natural than all this. But the circumstances were not favourable to the growth of an institution such as in an old country may still flourish. People who are battling with nature in the clearing of a new country require material and positive knowledge to aid them. They have no time to spare from the

pressing business of material life for the refinements of classical learning, or the beautiful subtleties of pure mathematics. Besides, the fathers of the growing provincials had already become ruder men themselves, and the system of Oxford, when transplanted to Fredericton, never secured either their sympathy or their support. It is just possible that, under the direction of very prudent heads, the kind and mode of instruction might have been so moulded to the special wants of such a community as to have attained the ends its founders had in view; but it must have been a delicate and arduous task in even the most liberal and enlightened hands.

At present, it is objected that the expense to the province is too great; that the habits which the students acquire in the society of Fredericton unfit them for the ruder life of the rural districts; that the education is not sufficiently positive; and that, with a bishop at its head having a known Tractarian bias, it is still of a sectarian character. If any university is to be supported at the expense of the province, it must, I think, be so framed that the government shall be vested equally in all Protestant sects, in some proportion to their respective numbers; and that the instruction and degrees given shall be only in arts and philosophy, leaving to each sect to establish and maintain schools or lectureships in theology for the students of its own body, if it shall see fit to do so. To something like this, from what I have seen of the growing public sentiment in the province, the organisation of King's College and University must come, if it is to continue to obtain a larger share of support from the public revenues than other schools of learning in the province.

Looking at a still young and undeveloped province like this, it must appear of great importance that its inhabitants should entertain a correct idea of its true and permanent natural resources—those which must be regarded

as the main source of wealth when the lumberage—that of cutting down and selling the ancient forests—shall have in a measure passed away. I have already mentioned an idea as being very prevalent that the mineral resources, especially the supplies of fossil fuel, in the colony, were inexhaustible, though all the research hitherto made had failed to discover a single workable seam of coal of good quality, or of great extent. On the other hand, it was supposed or asserted by many that the surface or soil of the province was not fitted to produce large supplies of human food, that it was not an agricultural country, and could not support a greatly increased population.

My earliest attention was directed to this latter opinion, and, by personal observation and inquiry, and by carefully collating the numerous documents in the Surveyor-general's office, I was enabled to classify the soils in the several districts of the province, and to ascertain, approximately, the relative proportions and absolute quantities of each quality of soil which it contains. In this way I estimated the province to contain a surface in imperial acres, in round numbers, of—

	Acres.
Soil No. 1, or 1st class, . .	50,000
Soil No. 2, or 2d class, . .	1,000,000
Soil No. 3, or 3d class, . .	6,950,000
Soil No. 4, or 4th class, . .	5,000,000
Soil No. 5, or 5th class, . .	5,000,000
Total area of the province, .	18,000,000

I have already stated that wheat has, for many years, been an uncertain crop in the province; that, of all the grain-crops, oats may be considered the surest and safest in the colony, taken as a whole; and that, for the support of stock, this grain and hay are the main reliance. I therefore classified the above soils according to their capability to produce hay and oats, supposing that land

which will yield one ton of hay per acre will produce, in arable culture, twenty bushels of oats; a ton and a half of hay, thirty bushels; two tons, forty bushels, and so on. Thus, I reckon that the several qualities of soil are such that—

	Tons of Hay.		Bushels of Oats.	
No. 1 will produce	2½	or	50	per imperial acre.
No. 2 ...	2	...	40	...
No. 3 ...	1½	...	30	...
No. 4 ...	1	...	20	...

No. 5 is supposed at present to be incapable of cultivation.

The whole available area of the province, therefore, will produce, on its several soils:—

	Tons of Hay.		Bushels of Oats.
First class, .	125,000	or	2,500,000
Second class, .	2,000,000	...	40,000,000
Third class, .	10,425,000	...	208,500,000
Fourth class, .	5,000,000	...	100,000,000
Total produce of the province,	17,550,000	or	351,000,000

This is equal to an average produce, over the whole available part of the province, of 1⅛ tons of hay, or 27 bushels of oats, per acre. Of course, the reader will understand that I only speak of the natural food-producing capability of the province, not implying that, at any time, it is likely ever to be devoted solely and entirely to the growth of hay and oats, but that the whole surface is capable of yielding on an average 1⅛ tons of hay, 27 bushels of oats, or their equivalent in some other species of food.

Now, allowing for the food of each human being, big and little, 40 bushels, or 5 quarters of oats, such as this colony produces; for each horse, 4 tons of hay; for neat cattle, 2 tons; and for sheep and pigs a quarter of a ton each; and supposing the relative proportions of human beings and of various kinds of stock in the colony to

remain as it is at present,* the above amount of produce will feed a population of—

Men, women, and children, .	4,200,000
Horses, . . .	600,000
Cattle, . . .	2,400,000
Sheep and pigs, . .	5,000,000

But the cattle, sheep, and pigs are reared for human food, and I have estimated the yearly increase of the above numbers of cattle, sheep, and pigs, to be able to feed about one-third as many people as the vegetable food will sustain.† Thus, the province, according to these calculations, is capable of sustaining—

Men, women, and children, .	5,600,000
Horses, ...	600,000
Cattle, ...	2,400,000
Sheep and pigs, . . .	5,000,000

The agricultural capabilities of the province, therefore, instead of being small, and limited to the support of a paltry population of a few hundred thousand only, are absolutely large, and fitted to raise food for several millions of people.

But the other opinion to which I have adverted, as to the abundance of fossil fuel in the province, interferes here with our calculation, and assumes an agricultural aspect of which it does not, at first sight, appear capable.

In the above calculation, it has been assumed that the whole of the available land is employed in the production of food, either for man or beast. In that case, the supply of timber from the five millions of acres of waste land, might yield all that was wanted for building and other domestic purposes, and for shipping. And if,

* Supposed at present to be—

Men, women, and children, . .	210,000
Horses and cattle, ...	150,000
Sheep and pigs, ...	250,000

† The mode in which this result is arrived at is detailed in my *Report on the Agricultural Capabilities of New Brunswick*, p. 30.

as the population thickens, supplies of fossil fuel are met with in sufficient abundance, the whole available surface may be so employed, and the population above arrived at of five and a half millions fully supported.

But, if fossil fuel should not be found, then a certain sensible proportion of the whole surface—of every farm, in fact—must, as in Scandinavia and Finland, be kept in forest for the supply of fuel to the farmer's family. Comparing the yearly produce of woodland in this province with the average annual consumption of fuel, I find that about two acres must be reserved under wood for each individual inhabitant; and, supposing the half of this to be supplied by the waste land, or in other ways, so as not materially to affect the production of food, still, one acre for each individual must be kept under wood, which might otherwise be employed in the production of food. This reduces the population-sustaining capability of the province to—

Men, women, and children, .	4,200,000
Horses, ...	450,000
Cattle, ...	1,800,000
Sheep and pigs, ...	3,750,000

If we compare these numbers with the previous calculation, we shall see that the presence or absence of a full supply of fossil fuel will make a difference of *one full fourth* in the agricultural capability of the province, as represented by the number of people it will support.

The extent to which good coal, capable of being worked to a profit, exists in the colony, is, therefore, a matter of important inquiry in connection, not only with the commercial and manufacturing, but also with the agricultural capabilities of the province. Nor is the inquiry one which, in this agricultural connection, it will be prudent to postpone till the population thickens, and a scarcity either of food or fuel is to be apprehended in the province as a whole. Where the land is good, the

temptation to clear *right away* is great, and is already in some districts—as I have already described to be in some measure the case in Sussex Vale—causing fuel to be comparatively scarce and dear. The larger the extent of cleared land at any place, the more distant and expensive must wood for fuel be, unless there be coal to supply its place. If coal, therefore, is not to be hereafter easily obtained, early steps should be taken in each neighbourhood to preserve a sufficient extent of the native forest, to prevent any future scarcity. *It should be reserved by legislative enactment.* But these steps will not be taken, nor will the necessity for taking them be understood, unless a careful examination by a prudent and uninterested party, skilled in practical mining as well as in theoretical geology, be made at the public expense, with the view of determining this point.

I have given, in the preceding pages, the average produce per acre of the more usually cultivated crops in some of the counties of New Brunswick. I might have given similar averages for each of the counties I passed through, as, in answer to a circular issued by the provincial authorities at my request, returns were furnished me from every part of the province. I have withheld these, however, for fear of overloading my pages with such matters. But out of the entire county averages I have prepared general averages for the whole province, which very much merit the attention of such of my readers as may be interested in the rural condition of this colony. These averages give for the produce per imperial acre of the different crops:—

Wheat,	18 bushels.	Barley,	27 bushels.
Oats,	33 ...	Buckwheat,	28 ...
Rye,	18 ...	Indian corn,	36 ...
Potatoes,	204 ...	Turnips,	390 ...
	or 6 tons.		or 11½ tons.

—the turnip-culture being still in its infancy.

These are large averages, not only absolutely, but relatively to other countries also. If we compare them with those of Great Britain and Ireland, we see in the following table—

	New Brunswick.	Ireland.	Great Britain.
Wheat, .	18 bush.	21 bush.	24 bush.
Barley, .	27 ...	35 ...	34 ...
Oats, . .	33 ...	35 ...	37 ...
Rye, . .	18 ...	— ...	25 ...
Potatoes, .	6 tons.	— ...	6 tons.
Turnips, .	10 ...	— ...	10½ ...

that, in the growth of root-crops, this province is equal to Great Britain, and that, in the growth of grain, it is not so far behind as the great attention which has been so long paid to rural affairs in this country would have led one to expect.

But it is with those of other parts of North America that it is most interesting to compare the averages of New Brunswick, and especially with those of the more westerly States and with Canada, to which the tide of emigration sets the strongest. In the following table, I have compared them with those of New York, Ohio, and Canada West, taken from official authorities:—

	New Brunswick.	New York.	Ohio.	Canada West.	Michigan.
Wheat,	18	14	15¼	13	10⅕
Barley,	27	16	24	17½	...
Oats,	33	26	34	25	...
Buckwheat,	28	14	20	16	...
Rye,	18	9½	16	11½	...
Indian corn,	36½	25	41	...	...
Potatoes,	204	90	69	84	...
Turnips,	390	88	...	...	..

On comparing the numbers in the several columns of this table, we see that the averages for New Brunswick are, with a single exception, higher than those of New York, Ohio, Canada West, or Michigan. The exception

is in the average yield of maize in Ohio, one of the great maize regions, which is greater than in New Brunswick, where it is an uncertain crop, cultivated extensively only in a few more favoured localities.

The result of this comparison surprised me—showing a larger productive power in the cultivated land of this province, as a whole, than in that of any of the western countries named, and which, with us at home, have hitherto been considered more favoured in soil or climate, or in both. The favourable issue of the comparison is probably to be ascribed to the newness or virgin state of the land in New Brunswick. If the exhausting system of culture now generally practised be continued, the averages will probably soon fall as low at least as any of those I have quoted.

One thing, however, comes clearly out of the New Brunswick averages, if they are to be relied upon, that the climate of this province—the length and severity of its winters, that is—has in itself no injurious influence upon the fertility of the soil: in other words, the climate does not unfit it for becoming as productive as its soils would be in our more favoured corner of the world. If the summer be short, the heat is great, and the growth rapid in proportion.

The chief evils of the climate, in its relation to rural affairs, are the long period during which it is necessary to keep stock of all kinds under cover, and the comparatively short autumn and spring for the performance of the ploughing, clearing, and other mechanical operations upon the land. It is only fair, however, to add, in extenuation of these evils, that many believe house-feeding all the year round to be the most profitable under all circumstances, and that in some countries this method is universally practised; and, again, that the severe frosts of winter so open and mellow the soil, that, as a skilful Scotch farmer on the river St John assured me, "they

leave the land more friable, and in better order for green-crops, than any number of ploughings done in winter could make it." If the land be ploughed once in the fall, it requires only to be harrowed with the seed in spring. Thus, if the period for out-door work be shorter, the labour required in preparing the land for crop is also less.

The average length of the agricultural year in the province—between the earliest spring and the latest fall-ploughing—is six months and twenty-two days. And the average period between the sowing and reaping of grain-crops is three months and seventeen days, leaving an open period of three months and three days for labouring and preparing the land. And it is fairly enough remarked, that though this period is much shorter than with us, yet the smaller number of rainy days, and the friable nature of the soil in spring, will enable an industrious farmer, with the same force, to do considerably more work during these ninety-five open days than could be done in Great Britain or Ireland in the same time.

There is another aspect in which it is not uninteresting to look at the condition and prospects of agriculture in this province. We have seen the absolute produce of the land according to the best existing data, but what is the money-value of the crops to the farmer? This, of course, depends on the prices of produce.

By collating all the reports I obtained from the several counties in the province, I deduced, for the average prices of raw produce in 1849, the numbers in the following table, per imperial quarter :—

	New Brunswick currency.	Sterling.
Wheat, . .	60s. 8d.	48s. 6d.
Barley, . .	34s.	27s. 3d.
Oats, . .	16s.	13s. 9d.
Rye, . .	38s. 8d.	22s. 9d.
Buckwheat, .	30s.	24s.
Indian corn, .	37s. 4d.	35s.

For colonial prices, these will appear very high, and they account for what at first I considered a very curious fact, that, in past years, Baltic wheat has not unfrequently been re-shipped at Liverpool for St John, for the use of New Brunswick millers.

With the above prices, considering the cheapness of production and the high average yield of the land, farming prudently conducted should be reasonably remunerative. But here, also, a better idea of the position of the New Brunswick provincial farmer ought to be obtained, by comparing the prices he receives, as well as the crops he reaps, with the more lauded western countries. I am able to do this in the cases of Ohio and Canada West, the prices in which countries for 1848, a high year, compared with those for New Brunswick in 1849, were as follow, per imperial quarter :—

	New Brunswick.	Canada West.	Ohio.
Wheat, .	48s. 6d.	22s. 5d.	24s. 8d.
Barley, .	27s. 3d.	14s. 5d.	11s. 9d.
Oats, .	13s. 9d.	8s.	6s. 5d.
Rye, .	22s. 9d.	14s. 5d.	12s. 10d.
Buckwheat,	24s.	16s.	11s. 6d.
Indian corn,	35s.	25s. 8d.	8s. 7d.

In respect of prices, therefore, the New Brunswick farmers have hitherto been better off than those either of Canada or of Ohio. And this fact, taken in connection with the larger average produce, ought to make farming more profitable to the former than to the latter.

But two very different meanings may be attached to the word *profitable*, applied to farming. It may be profitable to the man who, with his own family, or with only a little hired help, labours his own land, inasmuch as it yields a comfortable maintenance to his household, and places all above poverty or care. Or it may be profitable as an investment for capital, yielding a fair return for money expended in improvements, and in paying for hired labour

to carry it on. In the former sense, farming upon land of average quality may be said to be profitable in all the settled parts of North America. The industrious man who tills his own land is able to place and keep himself and his family in comfortable independence. In Great Britain and Ireland, it has hitherto as certainly been profitable in the second sense. It has kept the farmer's family, and, besides returning a fair interest upon money expended in improvements and labour, has enabled him to pay a rent to his landlord besides.

Now, in New Brunswick, those who are anxious to see agriculture advance feel the want, and desire the immigration, of farmers possessing both knowledge and capital. But the prevailing opinion is, that it will not pay to farm with hired labour—that is to say, that in this province farming is not a profitable investment for capital. I have already alluded to my personal inquiries upon this point, and to the answers I received at various places during my tour both in the provinces and in the States. I will here present a brief digest of all the information I was able to collect upon this important practical point.

If the crops be large and the prices good, and yet farming is not profitable, in our English sense, it must be that the cost of production is too great. Now, in New Brunswick human labour is the principal, almost the sole, item for which money is paid. Skill and method may no doubt diminish the present cost of feeding stock of all kinds, and make the same amount of human labour go farther in all branches of rural affairs; and supposing these to be possessed and applied by the farmer, human labour is the only element which in this province materially affects the cost of production by the hands of others. It is in fact so said in the province itself—"With the present high price of labour, it is impossible to farm profitably by the hands of others."

The wages of labour for farm-servants employed by the year, besides board, lodging, and generally washing, vary in the different counties, as I have shown in a previous chapter. The highest wages paid are £28, 16s. sterling (£36 currency,) and the average £16, 16s. sterling (£21 currency.) It is very customary to hire labour in summer at the rate of £3 currency a-month in hay-time and harvest, and £2 during the other summer months, and to discontinue it during winter—a method convenient enough for the farmer, but unlikely to retain in any neighbourhood a permanent body of satisfactory labourers.

These wages—6s. 6d. to 11s. a-week, with board—are certainly higher than the average of all England, but £14 to £16 a-year, with board, is the price now paid (1850) in these depressed times in the North of England for young able-bodied farm-servants, who can take charge of a pair of horses. The price of labour in the colony, therefore, does not seem alone sufficient to render farming unprofitable, where the crops are good, prices fair, taxes light, and the land unburdened with rent, tithes, or poor-rates. Of course skill, energy, and prudence are supposed to be applied along with the capital of the farmer, and are certainly necessary to success in agriculture, as in every other pursuit.

In this opinion I found myself sustained by that of a large number of the most energetic agriculturists in the province. I put the question—"Can farming, in your opinion, be profitably carried on by means of paid labour in this province?"—through a printed circular, to intelligent parties in every county. I obtained fifty replies, more or less extended, to this question, twenty-five of which were in the affirmative, and twenty-five in the negative. The positive testimony came from those who *did* make, or had made, money by the employment of paid labour; the negative from those

who *could* not, or had not, made money. The fair conclusion therefore is, that with energy, skill, and prudence—three qualities always possessed by much the smaller number of persons in all countries—labour may be profitably employed by the New Brunswick farmer; in other words, that capital employed in raising agricultural produce will yield a fair profit to its owner.

Of course opinions will differ as to what is a fair profit, and so long as more can be made more easily, or in less time, by employing the same capital in other ways, it will not find its way into the land. If people have been accustomed to realise anything like 50 per cent for their money—as my Canadian friend hinted had been the case among speculators in the lake-bordering countries—it will of course be some time before they will feel satisfied to descend to the humbler but more certain perennial profits of farming.

In considering the capabilities and agricultural condition of this province, I often asked myself, "Who are the parties that ought to emigrate to this colony?" The provincials themselves are not the safest men to trust upon this point. Every able-bodied man or woman who is willing to work, every child even, is a positive money-gain to the province. It is so much labour added to the permanent productive capital, and so much to the annual revenue, through the consumption of West India and other foreign produce. It is natural, therefore, that the arrival of immigrants should be welcomed and encouraged.

The climate is very healthy, but no person ought to select New Brunswick as a future home who is afraid of the severity of a cold winter. Then no one ought to go to any of these new countries who is tolerably comfortable at home, unless he has a large family to provide for, on whose behalf he is willing to encounter the

discomforts which necessarily attend a change to new scenes, circumstances, and habits.

Again, as to those who *may* come to this province—the poor man, whose ambition is limited to the attainment of a comfortable independence, abundant food and clothing for his family, and provision for them all after his own death—he may come. If he has only money to carry himself and his family there, he must or ought to be content to work for others a year or two, till he save enough to go into the woods and select and clear a lot of land for himself. In thus serving, he will also learn the ways and localities of the country; and if he be satisfied with reasonable wages, he will have little difficulty in finding employment. But if he can convey his family to the woods at once, and has still £20 to £50 over to sustain them during the first year, industry and hard work will do all the rest.

If a man can contrive to land with £100 in his pocket, he should not linger in the towns to spend it, but speedily select—if he has not already fixed upon—the county in which he is to fix himself, and, going among the older settlers, he will easily find in most places one willing to sell his land and clearing, for a sum within the means he possesses. Thus, he may at once place his family in a new home without delay, and avoid the hardships and discomforts which attend upon the first planter of a log-hut in the wilderness.

Those who can bring £500, £1000, or £2000 with them, will take more time to select, and will probably prefer to settle in an older and more fully cleared district. These parties will also find farms with wider clearings, and better houses and farm-buildings, which they can purchase for various sums suited to their means, in which, by working with their own hands and families, with a little hired labour, they will be able to live in independence, and may hope to place their

children, if industrious, in independent circumstances also.

But in regard to persons who are possessed of larger means, and who, wherever they go, wish or expect to carry with them the comforts and consideration, and to obtain from it the return of profit which such capital insures them at home, the course is more difficult. Two thousand pounds, or perhaps three, may be laid out in the purchase of a farm which the owner is himself to cultivate and live upon, and the farmer will enjoy more independence and higher consideration than the same capital would give him as a farmer in Great Britain. But if he wish to expend more capital on his land, employ more labour, and farm more largely, there is against his chances of success the prevailing opinion as to the employment of paid labour which I have already stated—though with skill, energy, and prudence, there is also, according to others, the prospect of a fair profit upon the capital he may expend, and a certainty of his attaining to a leading and influential position in a rising country, in which the importance of agriculture is becoming every day more acknowledged.

Those who wish to emigrate with a view to farming on a large scale—to become gentleman farmers, as they are called—have generally more means and leisure for acquiring information. Such persons, therefore, will judge for themselves as to the eligibility of New Brunswick for their purposes. But for a richer or higher class—men of capital, who wish to invest their money in land, and, letting it out to others, to live on the proceeds or rents—this is not the country. The time will no doubt come when such a class of men will spring up in the colony; but at present, land possessed, but not cultivated by its owner, yields comparatively little return. Renting land is in little favour; and, where it is farmed on shares, the lion's share generally falls to the culti-

vator. Capitalists, therefore, unless they embark in trade or banking, or peddle in money-lending upon the mortgages of distressed farmers, must seek some other country in which to settle, if they are dissatisfied with their position at home.

I have stated that every new immigrant who arrives, if he bring health and a willingness to work, is a gain to the colony; I have also incidentally alluded to the fact —as when speaking of the Harvey Settlement, and of the country on the river Tobique—that there are tracts of good available land scattered through the province, in various counties, which cannot be settled, because of the want of the necessary roads.

To both these facts the provincial authorities are fully alive; but as sums so large have already been and are still annually expended in making and maintaining the thirteen hundred miles of high-roads, besides bye-roads innumerable, and countless bridges, it has been found impossible to appropriate any further proportion of the yearly revenue to this purpose. It has, therefore, been determined as a means at once of inviting settlers, and of opening up new lands by roads, to dispose of these lands, on the condition that the grantees shall make the roads leading to or through them.

The section chosen for settlement is divided into eighty acre lots. These are sold at the rate of 4s. currency per acre, (3s. 3d. sterling.) Of this, 1s. an acre, or £4 in all, are paid down by the settler to defray the expense of survey, drawing up the grant, &c.; and the remaining 3s., or £12, by work done on the roads, at a fixed price per rood. It is stated that a body of emigrants arriving in June, would be able to open the road, cut down four acres on each of their lots for crops on the following spring, and build a log-house before the winter set in. Of course they must have means to maintain themselves and families during the

winter, and until the crops on their new land are ripe.

Bodies of emigrants from the same county or neighbourhood, going out as a single party, would work pleasantly together, and be good company and agreeable neighbours to each other, as those of the Harvey Settlement have been. I believe there is at this moment scarcely a county in Great Britain, in which, if the case were fairly stated, and cheap provision made for carrying the intending emigrants directly to a destination prepared for them, a band of thirty or forty stout-hearted men would not be found willing, with their families, to engage on such terms to embark for a new country, in which, after two years' hard labour, and some privation, independence and future comfort awaited them.

The immigration into New Brunswick has fallen off during the last two years. St John, St Andrews, and Miramichi are the three ports at which immigrant ships arrive, but much the greatest number lands at St John. The arrivals during the three last years have been :—

1847	1848	1849	Average
16,251	4020	2390	7550

The exact causes of this decrease during the last two years I cannot confidently specify, but I believe it to be ascribed mainly to the depressed state of commerce, and to the failure of the potato and wheat crops—causes, the pressure of which is in some measure alleviated, and which will hereafter allow the tide of immigration again to reach or exceed its former limit.

The spot to which the intending emigrant directs his steps is, in the majority of cases, determined less by considerations or representations presented to him at home, than by those which come from abroad. In various parts of North America, both in the States and in the provinces, I heard, as I passed through, of single letters com-

ing direct from California, setting whole neighbourhoods astir; and in one case, a hundred dollars remitted by a man to his wife, convinced a dozen young men forthwith that all was true which they had heard, and started them off to join the thousand adventurers who had gone before them.

So it is with emigrants from this country. A letter from a connection or acquaintance determines the choice of a place to go to, and, without further inquiry, the emigrant starts. Thus for a while emigration to a given point, once begun, goes on progressively by a kind of innate force. Those who go before urge those who follow, by hasty and inaccurate representations; so that, the more numerous the settlers from a particular district, the more numerous also the invitations for others to follow, till the fever of emigration subsides.

In other words, in proportion as the home-born settlers in one of these new countries increases, will the number of home-born emigrants to that country increase—but *for a time only*, if the place have real disadvantages.

In the case of the Irish—a people among whom nobody who knows them will deny that large and warm hearts naturally exist—there is an additional reason which leads to this result. Arrived on the foreign shore, the Irish boy or girl thinks less of personal comfort than of the brother, or sister, or mother, they have left in the "ould country;" and the hoarded earnings of their industry are accumulated, till they can be transmitted to bring over the other members of the family to join them. I doubt if either the Scotch or the English care so much, or do so much, when abroad, for their relations at home. Perhaps it may be that it is generally the poorest from these two British countries who leave their homes, and they leave no poorer relations behind them; whereas the sum necessary to take a family to New York would be comparative wealth to many a peasant's

family in Ireland. However this may be, it is unquestionable that much money is transmitted by the Irish emigrants in this way. I was told of many interesting cases, within the personal knowledge of my informants, at different places during my tour. This transmission of money, therefore, directly aids the increase of emigration to a particular state or province, from a particular district at home, after it has once set in.

The number of the home-born population in any of our colonies ought, therefore, in some measure to determine the amount of emigration likely to proceed from home to that colony year by year—supposing that, in the colony, times are generally good, and the prospects of rural settlers tolerably promising.

Now, with this idea to guide us, if we compare the immigration from these islands into New Brunswick with that to Canada, and to the North-western States by way of New York, we shall see that, though as yet absolutely small, it is neither comparatively nor discouragingly so.

All Canada in—	1846	1848	1849
Received of emigrants from all countries,	32,749	27,150	37,604

Upper Canada alone has a population of 700,000, mostly of British descent, and in larger proportion home-born than is the case in New Brunswick. With a population less than one-third of that of Upper Canada alone, supposing the circumstances equally favourable to emigration in both, from 5000 to 10,000 in a year is the full share which New Bruswick ought to receive of the annual swarms which leave our shores, supposing Upper Canada to receive 32,000.

Nor, if we take the immigration to New York as the port of entry for all the North-western States, will it appear that an influx of

128,592 in 1848 and 151,534 in 1849

though the numbers be large, is disproportionate to

the actual population, previous emigration, and yearly influx into New Brunswick?

The actual or absolute numbers who arrive at St John, therefore, are neither a test of the comparative merits nor demerits of New Brunswick, in the eyes of the classes from whom the emigrants are recruited at home; while, if the principle I have stated be a really influential one in giving a direction to the emigration movement, every new settler has an indirect value to the country he goes to, and to its revenue, much beyond that which directly arises from the transference of his own labour and capital, and from his personal consumption of imported duty-paying articles. Every new means, also, which the authorities take for the purpose of promoting new settlements of persons who have themselves no acquaintance in the colony, will continue to operate indirectly in producing a current from home, long after these means have ceased to be employed by the authorities themselves.

I have already adverted to the rapid progress which, as it appeared to me, this colony, though still infantile, has in reality of late years been making. My illustration was then drawn from the internal improvements which I saw had been made at various places in my route. But a test of the prosperity of this province, which will be more intelligible to many, may be drawn from the amount of its exports and imports.

I have stated that the recent stagnation of trade and the failure of the crops was a very probable cause of the diminution of the immigration, which, in ordinary circumstances, though absolutely and seemingly small, is comparatively large.

That trade has so suffered, will appear by repeating here the table of exports and imports at the single port of St John, which, for the three last years, to which I have access, were, in pounds currency—

	Exports.	Imports.
1846, .	£810,742	£977,683
1847, .	632,612	1,070,514
1848, .	588,466	588,422

From these numbers, it is clear that a very severe commercial crisis must have occurred during these latter years.

Yet, in this diminished state of its commerce, and in the worst of those years, New Brunswick will bear a favourable comparison with the adjoining States of the Union. In 1848, the exports and imports from the two ports of St John and St Andrews were, in pounds currency—

	St John.	St Andrews.	Total.
Exports, .	588,466	50,733	639,199
Imports, .	588,422	40,986	629,408

Again, the total exports and imports during the same year, in the three adjoining States of Maine, Vermont, and New Hampshire, were, in pounds currency—

	Exports.	Imports.
In the three States, .	624,935	290,718

A comparison of these numbers with those which represent the exports and imports for two ports only of New Brunswick, show that the commerce of this province is greater than that of all the three States united. And this fact appears the more striking, when it is added that the population of the three States taken together is 1,200,000, while that of the province is only 210,000 in all! It can scarcely be said, therefore, that, in commercial prosperity, it does not take a greatly advanced lead of the neighbouring States.

I had not the satisfaction of being in the province during the sitting of the Provincial Legislature; but I owe it to the many patriotic men it was my fortune to meet with to state, that I have never made so long a tour in any country, during which it was my fortune to meet so

large a number of persons who appeared anxious to use all their influence, direct or indirect, for the advancement of the common interest. I therefore conclude that, though jobbing may to some extent prevail, and a good deal of *Bunkum*, in the New Brunswick House of Assembly, yet that, on the whole, the small means at their disposal are as equally divided among the several objects to be promoted, and as small a percentage of the whole thrown away, as in most other Assemblies of a similar nature.

Among the encouragements to material progress in this province, which I have not yet noticed, is an annual grant of £200 for the encouragement of agriculture, in each county, wherever one-third as much is raised by voluntary subscription. The establishment of a Central Society, through whose hands these sums should be issued and expended, and to whom a general supervision of the agriculture and local agricultural societies of the colony should be intrusted, has also been in agitation.

The navigation of the river St John is another object of great importance to the internal communications of the province. Steamers regularly run up to Fredericton, ninety miles above St John; and during the season of floods they ascend to Woodstock. But it is possible to make the river navigable for small steamers almost to the Grand Falls; and to effect this object the Assembly have recently voted a sum, not to exceed £10,000 a-year.

Among other means of communication, upon which the hearts of the people of the province are set, are a series of railroads, intended to connect the port of St John with Halifax, with the St Lawrence, and with the American line from the west, now in progress through Maine. Could these railroads be made, there is not the shadow of a doubt that they would greatly benefit all the three North American provinces. But it is almost

equally certain that at present, and probably for a number of years to come, they could not be made to pay a dividend sufficient to justify a body of shareholders in taking the matter up without a guarantee from the Provincial or Home Governments, or from both. Were capital raised, however, and expended for this purpose by the provinces, as was done to make the Canadian and New York canals, though they might never return a direct percentage in the form of traffic-returns upon the money expended, they would be certain to promote their material advancement in so many other ways, as would far more than overbalance the apparent loss. Of this I believe the Provincial Governments are fully sensible, and several thousand pounds have already been expended by them in preliminary surveys; but the funds have not as yet been obtained for seriously commencing any but that of which I have already spoken as being now in progress at St Andrews.

Had the Home Government means to expend on provincial objects of magnitude, this is one which would well deserve its serious consideration. Indeed, I may say that, if the British people saw, in the internal peace and loyalty of the province, an assurance of a long and friendly connection, their influence, if necessary, would be exercised to induce parties in power to promote so useful an object. I often felt regret, when I thought of what might be done for the provinces, that restless agitators, for their own private ends, and urged by private enmities, should throw such obstacles in the way of the surest good of their native or adopted country.*

* Since I left the province, trade and commerce have revived, and, with these, the desire to accomplish the construction of one or more of these projected lines of railway. A convention has recently been held at Portland in Maine, consisting of delegates from the New England States and from the Provinces, with the view especially of organising a plan to which

Of the monster grievances against the mother country with which the colony has been made to ring, the removal of the timber-duties was one which long held a prominent place. In regard to these, while they were under discussion in the Provincial Legislature at Fredericton, my friend and travelling-companion, Mr Brown, made a very effective as well as characteristic speech. After relating all that England had done from time to time in defending, and supporting, and aiding her colonies, and fostering their commerce — of which these timber-duties, levied so long for their advantage, were an example—he adverted to their boasted loyalty, which had been so much shaken, if not altogether dissipated, by the new Timber Act of the Imperial Legislature. "Gentlemen," he said, "you remind me of that passage in Job where Satan answered the Lord, and said, 'Doth Job fear God for naught? Hast not thou made an

the designation of the *European and North American Railway* is given. The objects of this scheme are, *first*, to complete the existing railway, eastward through Maine to the eastern boundary of the State; *second*, to continue the line through New Brunswick to the city of St John, and thence through the vale of Sussex to the eastern boundary of this province in the Sackville marshes; *third*, to prolong it thence through Nova Scotia to a point near the Gut of Canseau; and *lastly*, to establish a line of magnificent quick steamers from that point to the harbour of Galway in Ireland. Between these points the distance by sea is 2000 miles, while the shortest from Boston is 2600, and from New York 3100. The sea-voyage will thus be lessened one thousand miles, and the journey from London to New York will be accomplished in six or seven days. The Legislature of Maine and the Provincial Governments have entered warmly into the plan, and, if it can be executed, it must be productive of great material benefits to the whole of North-eastern America.

With the view also of rendering more easy, cheap, safe, and healthy, the transfer of the poorer classes of emigrants, and, in general, of promoting the intercourse between the home islands and the North American colonies, it is proposed to establish a line of *emigrant steamers*, under Government contract, as the Cunard line is maintained. Such a line of boats as this would no doubt be productive of many benefits both to the provinces and to the mother country.

hedge about him and about his house, and about all that he hath on every side? thou hast blessed the work of his hands, and his substance is increased in the land. But put forth thine hand now, and touch all that he hath, and he will curse thee to thy face.' Your boasted loyalty to your Queen was not for naught; and now, when the hand is laid but lightly upon your goods, you curse her to her face!"

Two important facts in regard to these duties throw much light upon the true state of the matter as a grievance against the mother country, and upon the true cause of the recent stagnation and losses in the lumber trade. The first is, that when, on a former occasion, about fifteen years ago, a proposal to equalise the timber duties was in agitation, it was represented to the Home Government that so much capital had been invested in the North American provinces in saw-mills, and for other purposes connected with the trade, that very extensive ruin would follow the immediate removal of protection; and that some notice should be given, and time allowed, gradually to withdraw this capital. The measure, therefore, was not pressed at the time, but the colonies were warned to prepare themselves, as the duties would certainly be repealed at no distant date. The second fact is, that, so far from withdrawing their capital in consequence of this notice, fresh capital was poured into the trade, numerous new mills were built, speculation and competition advanced to an unprecedented height, and the prices of lumber were reduced in consequence of this competition, and the consequent over-supply of the home-markets, much lower than the removal of the duty would have depressed them. One of the most extensive lumber-merchants in the province owned to me, that mutual competition had done far more to injure the trade and the traders than the equalisation of the duties had done.

But, whether it be so or not, why should you New

Brunswick yeomen, with your broad unoccupied acres, which our home labourers envy you the possession of, and with a soil most grateful for any industrious attention you may bestow upon it—why should free men like you complain, that, having brought you up almost to man's estate, and given you yearly assistance in the shape of a higher price for your timber than we could get it for elsewhere—why should you complain and threaten, because the overburdened hard-working commoners of England make an effort to lessen their own need by withholding what is no longer required by your abundance? There are, at this moment, twenty times the number of your entire population among the slaving labourers and craftsmen of Great Britain who envy your lot, and would be delighted to change places with you. And yet you ask us to tax them more, or threaten to rebel. For shame, yeomen of New Brunswick. In no country of the world have I seen a finer-looking body of men than the farmers of your broad province, but you are heartless men if you would really insist still on taxing the more needy farmers and labourers at home, to add to the comforts of your own families, already better fed, better clothed, more healthful, more comfortable, and more independent than theirs.

It is not in the material interests of the province only that progress can be discerned. That which lies at the basis of all national as well as of all orderly progress—the common school-education of the scattered people—has also received attention, according to the means at the disposal of the legislature. The Lieutenant-governor and Executive Council constitute a Board of Education, under whose care the parish or common schools are placed. The teachers receive from the provincial funds salaries of £30, £22, and £18 a-year, according to the class in which they are placed by the Board of Examiners; and in order to improve this most important body of men,

two training-schools have been established, under competent masters. The sums voted for the support of these common schools, during the years 1847 and 1848, have been £12,250 and £13,882 respectively.

Under the direction of the present energetic attorney and solicitor generals, a consolidation and simplification of the law also is in process of being effected. In 1849, an act was passed, by which the criminal law was methodised and consolidated; and, in 1850, a similar one was introduced for the same purpose in reference to the civil law.

On the whole, I think the reader will be satisfied that more progress is making in the province of New Brunswick than is generally supposed; and that the province is in many respects more valuable than, in this country, it has often been considered to be.

In the province itself, it struck me as very remarkable, that while, among their republican neighbours, all the geese were swans, the provincials were constantly maintaining their own swans to be only geese. Everything was wrong in the eyes of many I met, and everything among themselves inferior; although, in almost every particular, when a close examination was made, their own superiority was manifest. They present one of the rare examples a traveller over the world meets with of people to whom the remarks of Sir John Mandeville, which I have prefixed as a motto to this book, do not strictly apply.

CHAPTER XXII.

Winter at Fredericton.—Freezing of the St John River.—Sleighing from Fredericton to the city of St John.—Darby Hooligan's.—Icy road.—Sure-footed horses.—Californian fever.—Effect of ancient gold-mines in the Alps on the price of gold.—Journey to Robinstown in Maine.—Christmas-dinner at Pembroke.—New England forms of expression.—Do tell.—Cherryfield.—Character of the country.—Breakneck hills.—Ellsworth.—New names of places.—Perplexing applications of old names.—Bangor.—Land-speculating.—Farming in Maine.—Complaints of the climate.—Lumber-trade in New England.—Pine-barrens of Georgia.—Pitch and yellow pines.—Sale of the pine barrens.—Lumber speculations.—Section of the coast-line of Georgia.—Relation of its soils to its rocks.—Connection between the northern and southern States.—Benefit derived by the North.—Diminution of the old planting estates.—Westward movements of the planters.—Sympathy of the North with Southern sentiment.—Town of Waterville.—Stoves in railway carriages.—White houses and new towns.—Prospects of Portland in Maine.—St Lawrence and Atlantic railways.—The Irish emigrants and the Yankee captains.—The Menhaden of Long-Island Sound.—Use of this fish as a manure.—Large hauls of it.—Manufacture into an artificial manure.—Cooper's character of the people of Connecticut.—Visiting on New-Year's Day.—Lectures on the relations of science to agriculture.—City of Albany.—Old Dutch houses.—The Capitol.—Roman Catholic party in Albany.—Number of Germans.—Legislature of the State of New York.—Rarity of re-elections to the Senate.—Effects of the system of rotation in office on the quality of the members of Legislature.—Professions and occupations of the members of Assembly; their social position.—Influence of the farmers and lawyers.—Predominance of English blood.—Ages of the members.—List of their relative weights.—Balance of parties.—Party tactics.—Opinion in this State upon slavery.—Equality of religious sects in the eye of the law.—Common School system in New York State.—Its history.—Former mode of conducting the schools.—Evils of the system.—Free-school system of

1849.—Objections and proposed remedies.—Amount of school-tax in the State of New York.—What a proportionate tax would be in Great Britain.—Importance of education to a free people.—Money-value to the holders of property of education among the masses.—Can the voluntary principle support schools?—Duty of Governments on the matter of education.—Total taxation of New York State.—Compared with taxation in the British Islands.—Different modes of making this comparison.—Voluntary contributions for the support of religion.—Difference in taxation between the United States and Great Britain.—Both regulated by the same principle of human nature.—Banking system in New York State.—Usury laws and legal rate of interest in the several States of the Union.—Case of usury in New York, and change of the law.—Moral weight of the New-England character.

The weather continued fine at Fredericton during the remainder of the month of November, with occasional frosts, but no snow. On the morning of the 26th, the thermometer in the shade at sunrise stood at 56° Fahrenheit. But, soon after, the frost came on sharp and sudden, so that the river was closed on the 2d of December. A few days later, carriage-tracks were marked out on the ice, opposite to the town; and carriages of all kinds, and waggons of hay and other produce, were driven across the broad river.

Snow fell also, and covered the ground, so that sleighing commenced, and the season of furs and sleighing parties, and all the enjoyments which this season brings with it to the young people of the provinces. Mocassins, fur-caps, buffalo-coats, and other wraps of skin, which alone are impenetrable to the piercing winds that occasionally blow, were the order of the day; and as I proposed to travel into the States during the severity of the winter, I provided myself with an ample supply.

On the 20th, I started for St John in an open sleigh at 9 P.M., that, by travelling during a part of the night, I might be able to arrive in good time on the morrow. A thaw had commenced, and it rained upon us for several hours very heavily. This change lessened the cold, but it had brought other discomforts along with it.

After midnight, we stopped at Darby Hooligan's—a name not very suggestive of comfort, which indeed we did not find. After attempting in vain to rest for a few hours, we started again soon after daylight, and, the thaw still continuing, found the road very slippery. In many places it was a perfect sheet of ice, and yet the horses trotted down the icy hills with the most perfect confidence and sureness of foot: long habit has taught them to dig their sharp shoes into the ice, so as to secure a perfect hold. In other places, again, which were exposed to the wind, and from which the snow had been in a great measure drifted off, the thaw had laid the ground nearly bare, so that the runners of the sleigh grated on the stony surface, and went along heavily and unpleasantly. I reached St John, however, about 2 P.M.

Among other points upon which I found some of my St John friends a little excited was the subject of California. It had been brought home to them, as it were, more truly and directly by the arrival of one of their own townsmen from the diggings, with lumps of gold taken up by his own hands. The fever which had spread over so large a part of the civilised world was, in consequence, finding daily its new victims here also.

The apprehension, at first very generally entertained, that the introduction of so large a supply of this precious metal would suddenly, or very soon, alter its relation to other commodities as a standard of value, appears to have now very much subsided; and yet such a result was not unknown in ancient times. In Strabo's *Geography*, book iv. chap. vi. § 9, the following passage occurs:—

"Polybius relates that, in his time, mines of gold were found among the Taurisci Norici, in the neighbourhood of Aquilea, so rich that, in digging to the depth of two feet only, gold was met with, and that the ordinary sinkings did not exceed fifteen feet; that part of it was

in the form of native gold, in pieces as large as a bean or a lupin, which lost only one-eighth in the fire; and that the rest, though requiring more purification, gave a considerable product; that, some Italians having associated themselves with the barbarians to work the mines, *in the space of two months the price of gold fell one-third throughout the whole of Italy*; and that the Taurisci, having seen this, expelled their foreign partners, and sold the metal themselves." The wider markets of our day, the greater demands of a vastly-increased metallic currency, and the multiplied uses to which gold is now applied, would prevent any such supply as that described by Strabo from sensibly affecting the money or other markets of our day. But if, as is now seriously asserted as the result of all our experience of the Californian mines, up to the time at which I write, they are likely to double for many years to come, the annual supply of this precious metal, the value of gold, in comparison with other articles, must certainly fall; that is, if gold be retained as the standard of value, the prices of all other articles must nominally rise. The effect of this upon general commerce, and upon the welfare of the labouring classes, must be decidedly beneficial, though, to persons of realised capital, which is held in money, it must be an increasing source of loss. A very great stimulus will, doubtless, be given by it to the material progress of all northern America, and especially of the United States.

Monday, 24th.—I left St John this morning on my way to Boston. The frozen harbour of St John, and the cold and stormy season of the year, had laid up all the steamboats along the coast. I had no other resource, therefore, but to face the severity of the weather, and proceed by land. My first day's journey was to St Andrews, by the unpleasant road I described in a former chapter. I started on wheels, but found the road icy and dangerous, from the half-melted and frozen snow.

I was glad, therefore, at St George, to obtain a carriage upon runners, to cross the very hilly country which lies between this place and Chamcook, which I did in safety. At eight in the evening I reached the neighbourhood of St Andrews; but, instead of entering the town, I drove at once to the ferry, and, wind and tide being favourable, crossed the St Croix to a small inn at Robinstown in Maine. The passage is two and three-quarter miles at the ferry—the channel of the river being about two miles wide.

Dec. 25.—At ten in the morning I was taken up by the Calais and Pembroke stage—an open sleigh—and drove on runners to the latter place, where I arrived at noon, and found a stage dinner awaiting me of roast-goose and mince-pie—a Christmas dinner which brought grateful remembrances with it so far from home.

This small town possesses considerable water-power, and, besides its lumber-trade, has a bar-iron and cut-nail manufactory, which employs a considerable number of people. The pig-iron is imported from Pennsylvania, and occasionally from Scotland, and the coal from Pictou, and yet the conversion into bar-iron pays here—chiefly, I should suppose, because of its being for the most part worked up into nails on the spot.

The country thus far into Maine is little better than the poorer parts of St John and Charlotte County in New Brunswick—thinly inhabited, unpromising, and cleared only along the roads.

We were to change stages here, and as I was the only passenger, I asked the new coachman, as soon as I had dined, if he was waiting for me. "I am not waiting for you, nor anybody else," was the not very civil reply, as I caught it. I made no remark; but after lingering about some time longer, and seeing him still in the house apparently waiting, I asked him again if he was ready?

He answered, he was waiting for me. It then came

out that his answer to my first question was, "I am waiting for nobody else,"—a singular round-about form of expression, not uncommon in some parts of New England.

"Do you know So-and-so?" a person will ask. "I don't know anything else," will be the reply — meaning that the person knows it very well. "Did you meet Mr So-and-so?" "I didn't meet anybody else,"meaning that he met the person, and probably many others besides. It is rare in any country to meet a provincialism so obviously awkward as this. "I don't know as I shan't," which is common in eastern Massachusetts, is not nearly so bad; though both imply a kind of grudging spirit, which is unwilling to favour you with a direct answer. "Do tell," used in New England for Indeed! wonderful! has much brevity, and a little waggery in it. A stranger, when telling a story, is greeted when he has finished with the exclamation "do tell!"—meaning simply, "do you tell me so!" but asking him really to tell it again. But, if he do repeat the story in his simplicity, his hearer listens to him with amazement; and when he has finished repeats also, to his still greater surprise, "do tell!"

To East Machias, about twenty-five miles, we proceeded on wheels with four horses. The driver was cautious, and went very slow. We then changed, and with a fresh team drove twenty-eight miles further to Cherryfield, which we reached half-an-hour after midnight.

The country through which we passed, during these last twenty-eight miles, consisted of a succession of steep hills, or parallel ridges of land, following each other at short distances, with brief valleys or flats between. It was more like the first part of the Kempt Road I had passed over, on leaving the shores of the St Lawrence, than any other part of North America it has

been my fortune to cross. It was worse by much, as it appeared to me, than the ridgy part of the road between St George and St Andrews, in New Brunswick. The whole road, also, was glassy with frozen snow; and, as we were on high wheels, it was no easy matter to get safely over the steep descents. Every successive ridge was another *montagne Russe*. To hold back was impossible, as, immediately on the attempt being made, the carriage began to *slew* round and proceed sideways. The only way to keep us from spilling, therefore, was to give the horses rein; and it really did seem frightful to look at the break-neck pace with which our four horses, digging in their feet, galloped with us down these icy slopes. Had the horses not gone on so, the carriage would have got before them; and so, with a steady hand and eye, and no great deal of light, but with a perfect knowledge of the road, the duty of the coachman was simply to steer. With one change of horses, it may be supposed that, at such a pace, we made very fair speed during these last twenty-eight miles. A strong wind blew, however; and though, on our arrival at Cherryfield, the thermometer was no lower than—6° Fahr., we felt it bitterly cold. Without buffalo-coats, with which I and my fellow-passengers were all furnished, it would have been almost impossible to have lived throughout the twelve hours I had sat in that open carriage.

Dec. 26.—A comfortable bed for a few hours, and a dirty breakfast, prepared us indifferently to start again at six in the morning. The thermometer was at—12° Fahr., —low enough for an open carriage; but the sky was clear and calm; so that it was not by any means so chillingly cold as on the previous night. We were still on wheels, but the road was not so hilly as before, and we reached Ellsworth soon after 11 A.M. This is a pretty, clean, and prosperous-looking little town, supported chiefly by lumbering. A clean pleasant inn, a warm blazing fire,

and, after a time, a nice refreshing dinner, invigorated me for the remainder of my journey to Bangor.

All my fellow-travellers left me here to join the steamboat at Bucksport, twelve or fifteen miles below Bangor, and so much nearer the mouth of the Penobscot, from which place there was still a clear passage by sea to Portland in Maine. I clung to the land, however, and went a solitary passenger in a comfortable—what I now looked upon as a luxurious—covered sleigh to Bangor, where I arrived about 5 P.M.

What a confounding of all his old geography is the unhappy Englishman doomed to undergo in a new country like this, where names are wanted faster than they can be coined, and where a new well of previously unappropriated appellations is a kind of bounteous godsend. It was among the benefits of the Hungarian war that it furnished a supply of previously unheard-of names, which were eagerly grasped at in all the backsettlements of the American Union. "We rejoice," I read one morning in a popular daily paper, "we rejoice to see among the new post-offices which have been established, the names of Bem and Kossuth. These glorious men have now a chance of being immortalised." Immortalised in a wilderness post-office!

But it is the old names that puzzle the travelling Englishman. At the mouth of the Penobscot stands the town of Belfast, a little higher up Frankfort, above that Bangor, some miles inland Exeter, and still further, Dover! What a jumbling he finds here. And the perplexity which this causes to the traveller, is one which will be perpetuated among the rising New Englanders, whose lessons in geography must be all the more difficult, since scarcely a single name will recall the position of a definite place, and future history must find itself similarly perplexed.

Bangor — built on the low intervale and on the

sloping upland which skirts the Penobscot—is a town of ten or fifteen thousand inhabitants, well built, straggling and unfinished, like all these new towns. It is difficult, therefore, to judge of its population from the ground it covers. It appears to be a place of considerable business, and to be prosperous and growing. The lumber trade of the interior, and the supplying of the lumberers and inland dealers with stores, are the chief sources of profit to its inhabitants. Land-speculating, also, has made and marred many fortunes in this city and state, causing sudden prosperity followed by crashes and great failures. But here, as elsewhere, those have become the wealthiest in the end who have kept clear of speculation, and have been content with a safe and steady business. Though often left behind for a time, by their more daring neighbours, they have still kept their place and increased in wealth after the more sudden stars had one by one disappeared.

Farming in Maine is not of itself profitable enough to satisfy the haste of the people to become rich. The farms are for the most part small—from eighty to a hundred acres—and the land which I passed through generally poor. Complaints against the climate, if I may judge from my own experience, abound tenfold more here than I heard them in New Brunswick—that the season is short, that Indian corn won't ripen, and so on. Oats and potatoes, however, are allowed to be sure crops, when the latter are free from disease.

On the Kenebec River, which is farther to the west, there are good intervale lands, and the uplands, which are a strong loam, are very productive in hay. Stock husbandry is for this reason beginning to be attended to in that district of the State, but the turnip-culture is still almost unknown. Between Ellsworth and Bangor, the country through which I passed is very much overspread with granitic drift and boulders. Pale yellow,

generally light, soils are formed by or upon this drift; and even where hardwood or mixed trees grow, and appear to indicate a better soil, the number of stones is often so great as entirely to forbid the possibility, under present circumstances at least, of clearing the land for crops in a profitable manner. But a country overlaid with snow may have appeared to me, even where covered with wood, more dreary and hopeless than if I had crossed it in the season of summer.

Dec. 27.—The railway from Boston is now nearly completed to Bangor. It had been opened as far as Waterville, forty-five miles from Bangor, at the period of my visit, and at 6 A.M. I started from the latter place in a covered sleigh for the railway terminus. It was a public stage, and I found an agreeable party inside, who made the time pass more pleasantly than the last three severe days had done. The thermometer was still very low, and we required all our skins to shelter us; but we drove quietly and smoothly on over the slightly yielding snow, and soon after one o'clock arrived at Waterville.

Maine may be considered as the headquarters of the northern lumber-trade of the States. There are here many speculators in this branch of business; and it is interesting to learn how States so remote as those of Maine in the north, and Georgia in the south, should be connected together by a community of pursuit, and should offer similar fields of enterprise for the same men. Throughout all New England, the lumber-trade has been to the earlier inhabitants of the several States, of which it consists, what it still is to Maine and New Brunswick. But as the best timber disappeared, the lumber merchants have sought from to time new forests; and it was a desire to possess those of the valley of the Aroostook that chiefly stirred up the people of Maine in the dispute as to the New Brunswick boundary. Since that time,

the pine-barrens of the Southern States have become mines of lumber, which the northern men cut down during their own winter, and carry to build ships with in their own ports during their own summer, or transport to Cuba and the West Indies in their own ships. One of my fellow-travellers, himself a large speculator in southern timber, informed me that there were at that time about three thousand Maine men in Georgia employed at this work.

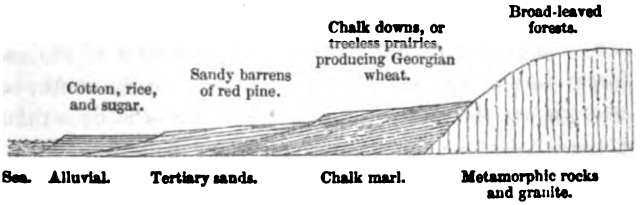
The pine-barrens of North Carolina bear the pitch-pine, (*Pinus rigida*,) and yield large supplies of turpentine and lumber, which are shipped from the port of Wilmington in that state. On those of Georgia, the yellow pine (*Pinus mitis*) chiefly grows—a hard pine, of which the wood is superior to that of the pitch-pine. The sap-wood in the yellow is thin, while that of the pitch-pine is thick, so that the proportion of hard resinous wood in the latter is not so great.

The recent history of the pine-region of Georgia presents, to a native of Great Britain, a striking illustration of the peculiar state of things in these new countries. After the settlement of the boundary-line between Georgia and Florida, the former State divided by lot the whole of the unsold lands, previously surveyed, among the resident population. The cost of surveying, and other expenses, made a charge of two cents an acre on these lands. But a great many of those who drew the pine-barren lots, refused to take out their grants, and pay the two cents an acre. The State Legislature, therefore, ordered that all land of this kind, which should be unclaimed after a certain period, should be sold at four cents an acre to whoever would buy it. In consequence, individual speculators and companies bought largely at these sales. My travelling companion was one of a small party who bought 190,000 acres in one locality, in the hope of making large profits out of the lumber. Hence

the influx of northern lumberers, skilled in the business, to this southern region.

The hopes of the speculaters are said not to have been hitherto realised; but the barrens have by their exertions been made to yield a large supply of valuable articles of export, and which it will continue to do for many years to come. Thus the State of Georgia has so far benefited by their exertions.

It may be interesting to the reader, while on the subject of these pine-barrens of Georgia, to obtain an idea of their position in reference to the coast-line, and to the other lands in this State. The following section shows that position, while it exhibits, at the same time, another very beautiful example of the relations of geology to agricultural capability; how the existence of swamp, sandy barren, and open prairie in different localities is explained, and where, the geology being known, the probable occurrence of each may be predicted.



Next the sea we have the alluvial flats—a border of twenty miles or thereby in breadth—forming rich soils, from which unwholesome exhalations rise, and on which grow the sea-island cotton, the rice, and the sugar. This is succeeded by a sandy terrace, elevated perhaps fifteen feet above the alluvial flats and swamps, forming the pine-barrens—unprofitable to cultivate, but covered with natural forests of valuable red pine. Then, rising another step, we are upon the chalk marls, which form

a belt of naked prairie, like our English chalk-downs, susceptible of cultivation to a certain extent, and producing the Georgian wheat.

The variety grown on these downs is a winter-wheat, sown about the end of September—three-fourths to one bushel of seed per acre. On this soil it gives a return of only eight or ten seeds. One would suppose such a produce would not pay for culture, at the price of 60 to 75 cents a bushel—ten bushels, at 75 cents, being only 7½ dollars, or 32s. 6d. an acre. I suppose that, as in New Brunswick and Michigan, it is the excessive cheapness of culture, and the small expenditure of labour required by this new land, that makes it possible to till it for such small returns.

The cotton-lands yield a bale of 450 to 500 lb. of clean cotton per acre. Wheat is also grown upon them. The approved rotation on these rich soils is Indian-corn, wheat, and cotton, with occasional naked fallows, and rarer crops of clover and potatoes. Can such a rotation fail to exhaust the surface-soil?

The connection between the northern States of Maine and Massachusetts, and their countrymen in the south, is profitable to the former in many other ways besides that of speculating on the produce of their barrens. Two-thirds of the population of these two States live on the twenty miles of sea-board, engaged in shipbuilding and manufactures. All their creeks, inlets, and river-mouths, which are nearly countless, abound in lumber-merchants, shipbuilders, and carpenters. The ships they build and own are not employed, for the most part, in the commerce of their own country, but in carrying to market the produce of the southern States. Cotton, sugar, and rice are grown by southern men, but they are conveyed to the place of consumption by northerns, who profit about as much by their crops as the growers do themselves.

In this fact we see one reason why the southerners are not so much enriched, as a whole, by the abundant yield of their fertile lands as they ought to be. Their own carrying trade, a great element of power, is entirely lost to them; and, what is perhaps more provoking to them, their own timber now builds many of the ships by which that power is conveyed to others.

And the cause for the decline of some of these states, and a natural source of complaint among the planting aristocracy, is to be found in the gradual subdivision of the large estates of the old planters among the children of the successive generations who have inherited them. While the ancient style of living has been retained, the means of supporting the expense it entails have been gradually and constantly diminishing. Not to speak of the exhaustion of the soil as a cause, therefore, this subdivision of the old properties must alone gradually revolutionise society, and exercise a powerful influence upon every southern institution.

Among these, slavery is a very prominent one, which the lessening of estates must affect very much. And one can very well understand how a planter, who feels himself confined in a small property, and his consequence lessened, should desire to sell his small, but—reckoned by the acre—much more valuable estate, and to move farther west, where a large estate, which he can work with his negroes in the ancient style, can be purchased for a smaller sum; and why also the planters, as a class, should desire to have a wide field before them into which such migrations may be made.

And with so close a dependence of these northern States upon the southern, one cannot wonder that there should exist very many in the more populous parts of New England who sympathise with the people of the south, and very many more who would make a very yielding compromise, rather than drive them to extremities. Looking at the question fairly and candidly, it is

a very honourable thing to the sea-coast of New England that, with all these fetters of pecuniary advantage hanging about it, so strong an anti-slavery feeling should really be everywhere found, and so many who declare themselves against the continuance of slavery.

Waterville stands on the Kenebec River. It is a clean new town, at least so it seemed to me, with its white houses and streets covered with snow. It is the seat of a Baptist college, founded in 1820, which has five professors, seventy-six students, and a library of eight thousand volumes. The college buildings are plain but capacious, and the situation retired and beautiful. The cultivation and productiveness of the intervales and uplands, on the Kenebec River, have been much esteemed in Maine. One of the most valuable agricultural districts of Old Maine lies along its banks; but, from what I have heard of it, the newly acquired land upon the Aroostook River, which is rapidly filling up, ought to be of a still richer quality.

After an hour's delay at this place, we were delighted to embark in one of the cars of the railway train, which, being warmed to any desired temperature by roaring stoves, placed us in entirely new conditions, as to comfort, for the rest of our journey. Our furs and skins now became so much lumber, though the weather outside was as cold as ever. It is in a winter season like this, when, in an English first-class carriage, the half-starved passenger would be wrapping himself in cloaks and railway rugs, that the superior comfort of the long American carriage—which, though common to fifty or sixty passengers, carries a large stove in the centre—becomes feelingly evident.

At seven in the evening we arrived at Portland, a town of twenty thousand inhabitants, the largest in the State of Maine. It has some well-built streets, and has the air of a thriving and prosperous town. To a Euro-

pean, these white houses and new towns, disguised with fresh paint, have all so much the air of having just been taken out of a bandbox or a toy-seller's shop, that he is apt to see in them more signs of rapid and immediate improvement than really exist. In an old town in Europe, what is really new is easily distinguished, and the rate of recent progress easily judged of. But this criterion fails the traveller here, and he must look closer, and inquire more, if he would not exaggerate greatly the tale of prosperity which these towns appear to tell.

Portland in Maine, like St Andrews in New Brunswick, flourished formerly on the proceeds of the West India trade. But here also, as at St Andrews—though "Peel's Bill," which is said to have ruined St Andrews, ought to have given greater wealth to Portland—the West India trade also failed, and checked the growing prosperity of the place. But the construction of railways east and west has recently revived it; while that towards the north and the St Lawrence, (the St Lawrence and Atlantic railroad from Montreal to Portland,) and the expectation of becoming through it the outlet of the trade of the Canadas, hold out an encouraging prospect of a large future increase to the commerce of the port. Boston, Portland, and New York, are now rivals for this Canadian commerce, and are running a race with each other, which of the three shall first have a railway opened from the Atlantic to the banks of the St Lawrence. The shortest of the three routes from Montreal to the Atlantic is by Portland, and this place will certainly receive its share of the transit trade of both Upper and Lower Canada; but the natural outlet by the St Lawrence, if the Canadians are true to themselves, will by-and-by swallow the lion's share of the intercourse of these countries with Europe, in spite of all the railways and canals which have yet been projected.

Dec. 28.—Leaving Portland by the railway at 8½ A. M.,

I arrived at Boston (111 miles) in time to dine at the United States Hotel at 2 P. M. I started again at 4, crossed the State of Connecticut, reached Newhaven (162 miles) at 11 P. M., and was delighted to find myself again in comfortable quiet quarters at the house of my friend, Professor Norton. One of my fellow-passengers was treasurer to one of the lines along which I passed, and which has a connection at one of its termini with the steamers employed in the coasting trade. He amused us all, and I may say interested me, by numerous illustrations of a character in the Irish who travelled by these boats and by the railway, which is not unfamiliar to the shipmasters of the Mersey and the Clyde. So many of them pretend and protest that they are penniless, and are unable to pay their fares, and the sharp Yankees, who are now up to their tricks as much as we are at home, have so many resources at command for discovering their secret hoards, and making them fork out. He told us of one shrewd skipper, who, after one of these fellows had lied for several hours as to his abject poverty, and with his wife and a family of children around him, had been detained, locked up with them in the cabin, at last bethought himself of a new test. "Now," says he, "I know you have money; but," chalking a cross on the back of a book, "if you will swear you have none, and kiss the cross, I'll let you and your family go." The man reddened, looked at his wife, hesitated, and after a while replied, "I can't do it, sir;" and, putting his hand into his breast, took out a purse with many sovereigns, and, after all the lies he had told before his young family, was content to pay his fare. How curious it is to see this propensity to conceal the possession of money following this people into whatever new circumstances they come.

Jan. 1, 1850.—In describing my former visit to Newhaven, I mentioned the oyster trade of the bay as one of

those peculiar sources of profit which the enterprising spirit of the New Englanders of the Atlantic border had created, and which I now found proceeding—as it was the especial season here, as well as at home, for making presents of good things to eat—with great activity. But there is another natural production of the Bay of Newhaven, and of the whole of Long Island Sound, which is quite as worthy of the notice of a stranger, and is of at least as much use to the country and people on its opposite shores. This is a fish known by the name of the menhaden, (*Alosa menhaden*,) and called also the mossbunker, the hard head, and the bony fish. It has some external resemblance to the herring, but is larger, and is caught in enormous quantities. It is thus spoken of by Dr De Kay, in his *Zoology of New York*:—

"Though seldom eaten, as it is dry, without flavour, and full of bones, yet it is one of the most valuable fish within our waters. Its use as a manure is well known in the counties of Suffolk, King's, and Queen's, (New York State,) where it is a source of great wealth to the farmer who lives upon the sea-coast. They are used in various ways. For Indian-corn, two or three are thrown on a hill; for wheat, they are thrown broadcast on the field, and ploughed under—although it is not uncommon to put them in layers alternately with common mould, and when decomposed, to spread it like any other compost. Old grass-fields, when spread over with these fish, at the rate of about two thousand to the acre, are very remarkably renovated. Their value as manure has one drawback in the abominable and unhealthy stench which poisons the whole country, and, according to the testimony of some medical writers, lays the foundation of dysenteries and autumnal fevers. They appear on the shores of Long Island about the beginning of June in immense shoals; and as they frequently swim with a part of the head above or near the surface of the water,

they are readily seen and captured. They are commonly sold on the spot at the rate of two dollars the waggon-load, containing about a thousand fish. The largest haul I remember to have heard of was through the surf at Bridgehampton, at the end of the island. Eighty-four waggon-loads—or, in other words, eighty-four thousand—of these fish were taken at a single haul. On the coast of Massachusetts, they are used as bait for mackerel, cod, and halibut, and many are packed away for exportation to the West Indies. In 1836, fourteen hundred and eighty-eight barrels were thus salted down for exportation."*

A still larger haul than this last was taken in Newhaven harbour in May 1848. A shoal of porpoises drove in the fish, and, at one haul, 2,000,000 of them, averaging three-quarters of a pound each—in all 750 tons weight—were drawn in at a single haul. The farmers in the neighbourhood bought them at one-half to three-quarters of a dollar (2s. 2d. to 3s. 3d.) a thousand, and were employed several days in carting them off.

In consequence of the great abundance of these fish, experiments are now making in the neighbourhood of Newhaven to establish a manufactory of oil and portable manure from them, which may prove more profitable than selling them for direct application to the land. The fish are inclosed in a proper steaming-apparatus, are so far cooked that the oil separates and can be drawn off, as in the lard-factories of Cincinnati or the tallow-extraction in South America and Australia. The substance of the fish is then artificially dried and pressed into cakes. If this operation can be conducted economically, the manure produced must be very valuable, and will soon create for itself a ready market.

Notwithstanding the progressive state of agriculture

* De Kay, *Zoology of New York*, Part iv. p. 260.

in New England, I was informed that Liverpool was looked to as the most likely market for this new manufacture. English farmers can have no objection that such manuring substances as this should be brought within their reach. The South American tallow-boilers are already sending their dried animal-refuse to be sold in our manure-markets; and it is not improbable that, the trade being once begun, those of Australia and Cincinnati, as well as the fish-steamers of Long Island Sound, may hereafter, profitably to themselves as well as usefully to us, make up for the failure of so many of our sources of guano, and enable us still to farm highly and to struggle more successfully with the difficulties under which our agriculture is at present struggling. On some parts of our coasts, sprats, mackerel, dog-fish, and other species, sometimes appear in vast shoals. If they are known at any locality to return with sufficient regularity, such a manufacture might prove economical also among us.

Cooper the novelist ascribes to the people of Connecticut a character which would have set all the American journals in a fury had it escaped from the pen of Mrs Trollope or of Dickens. He says, "it is one of their marked peculiarities to part with nothing without a *quid pro quo*; that little services, offerings, and conveniences, for which elsewhere no remuneration is even thought of, are here regularly booked, and payment expected, and perhaps asked for, years after, even by persons in easy circumstances—that when a friend pays a visit of a few days he is said to be *boarding* with his host, as if he were expected to pay his score—and that the free and frank habits which prevail among relatives and friends elsewhere are nearly unknown there, every service having its price."*

If all this be true, and Cooper ought to know his own

* See COOPER'S *Lost Sealers*, vol. i. chap. 1.

countrymen best, I had not discernment enough to discover it. The Connecticut people certainly do not carry their hearts in their hands, yet I foolishly mistook for genuine kindness what may only have been traps laid for my simplicity; and long bills may be entered in the books of my *soi-disant* friends, which I may yet be called upon to discharge! It is cruel in Cooper thus to snap asunder the cord that, across broad waters and through the memories of the past, unite the grateful guest to the hospitable host, and for the elastic tie of friendship to substitute the vulgar connection of ordinary money-traffic.

It is the custom in this State of New York, as it still is to a great extent in Scotland, for the gentlemen to visit all the ladies of their acquaintance on New-Year's day. Only, on the west side of the Atlantic, the visiting is done in the day-time, and without the accompaniment of the Scottish bottle. In New York and Albany, every gentleman is in the streets on this day. In Newhaven, and other places towards the east, the custom is only beginning to become general, and there is a disposition to encourage it.

Albany, Jan. 4, 1850.—I came here by railway through a snowy country, with the intention of spending four weeks, and of delivering a short course of lectures during the sitting of the State Legislature, which I had been invited to give before I left home. They were delivered in the hall of the Assembly, and were professedly addressed to the members of the Assembly and of the State Agricultural Society, but were, I believe, open to all who were interested in the subject. The course was on "The general relations of science to agriculture," and was intended to bear on the subject of a bill then before the House for the establishment of an agricultural college. The lectures were well attended, and have not been uninfluential, I am informed, in giving a further impulse to the progress of scientific agriculture in this

part of the Union. A *further* impulse—for I can honestly say, that in the State of New York, both in Albany and elsewhere, I met with a very large number of intelligent and zealous men, who were already most anxious to improve and promote the agriculture of their native country. There are, of course, here as in other countries, many drags on their wheels, and a large infusion of the same spirit prevails in New England which in Old England still retards the introduction of new and the abandonment of old and less profitable methods of husbandry.

Albany, the seat of government of the Empire State, is a city of 45,000 inhabitants. It is prettily situated on the banks of the river Hudson, which, skirting the river with a narrow edging of flat land, ascend with a rapid slope on either shore. On this flat margin, and along the steep slope, the city stands. Upon the summit of the slope, knolls of higher ground here and there occur, and tufts of the old forest, which present from the river many agreeable points of view, and afford pleasant sites for houses, of which the wealthier citizens of Albany are very generally availing themselves. The town is well built, chiefly of brick, and has some remnants of young antiquity about it in a few of the original houses which were built by the old Dutch settlers, and with *clinkers* brought from Holland. It appears to us now a very simple proceeding to bring bricks dug from the fens of Holland across the Atlantic to build houses on banks of stiff clay, clothed with forests of abundant fuel! The State House, called the Capitol, stood on what was the highest part of the city at the time it was built; but the city has since extended, and the Roman Catholics have possessed themselves of the real summit or highest part of the bank, and are building upon it a magnificent cathedral.

The Romanists are a powerful body in Albany, and command a very numerous vote. They had a bazaar for

some church object a short time before my visit to the city, by which they cleared 4000 dollars. A clergyman of another denomination, talking to me on the subject, mentioned that his people had also had one. "And how much money did you clear?" I asked. "Four hundred dollars," was his reply. "And how do you account for that great difference?" "The reason is, that my bazaar and that of any other denomination is supported only by our own people, but everybody patronises the Roman Catholic bazaar. Their vote is so strong that nobody who looks for any public office, and no party, dare give them offence. Every one courts them, and thus they continually gain in strength, in wealth, and in influence."

Albany was founded by the Dutch, and many of their descendants remain and give the character of steadiness and aversion to rash speculation, which still favourably distinguishes the merchants of Albany. There are now, besides other admixtures, many of Irish birth and descent, and about six thousand Germans. The Germans are prosperous, and are increasing in numbers. They have three Protestant and one Romanist church, and two synagogues.

The prosperity of Albany is dependent upon its position on the Hudson, above the head of tide-water, and at a point from which the road is shortest and most direct towards the rich western country on the borders of the lakes. It has now, however, a formidable rival in the town of Troy, about six miles farther up the river, which in some respects enjoys advantages over Albany, both as regards the trade to the west, and with Canada by the way of Lake Champlain.

The Legislature of the State of New York consists of a Senate of 32 members, chosen for two years, one from each county, and an Assembly of 128, elected annually, four from each county. The session commences with the beginning of the year, and business had

scarcely been entered upon at the time of my arrival. It was the first session of the Senate, and out of the thirty-two who had served in the former Senate, only three members had been returned to the new one. This fact illustrates two things—first, how very widely the supposed justice of the principle of a rotation of office prevails, and how generally it is acted on; and, second, why it is that in the State Legislatures, and in Congress, so much time is spent in preliminary business, and in discussions which lead to no effective advance in legislation. It is considered an advantage, both pecuniary and otherwise, to go to Albany for the first hundred days of the year; and as all have an equal right to enjoy this advantage, the rule is to change the members every election—the exception, to return the same person more than once to the State or National Legislatures.

I have said the first hundred days of the year, as, by the constitution of the State of New York (Article III., § 6,) the members of the Legislature receive 3 dollars a-day for their services, but the allowance for the session cannot exceed 300 dollars in all. So that, if they sit beyond the hundred days, they receive no pay for the extra days—an admirable spur upon their proceedings when the second month of the session is over.

This system of rotation in office is followed by the necessary consequences—that only third or fourth rate men in regard to talent are usually returned to serve in the Legislature; that scarcely one member in a new house knows more of affairs than another, or has made any one branch his special study; and that all come up raw, and must of necessity spend six weeks in talking, that they may be broken in, and made gradually to see that the crude notions and intentions they each brought with them from the country cannot be put in practice, and will not bear the critical examination of their brother

members. When the raw men have hunted to death the absurdities of each other, then the common-sense people take the lead, and business proceeds.

The social position, as we should call it, of the persons who are elected to the Legislature of this State, would with us be easily judged of, from the following analysis of the House of Representatives for 1850. The house consists of 128 members, of whom there were—

Farmers, ...	54
Lawyers, ...	26
Merchants, ...	16
Physicians, ...	9
Gentlemen, ...	6
Manufacturers, ...	5
Merchants, ...	3
Tanners, ironfounders, accountants, blacksmiths, hotel-keepers, lumber-merchants, millers, teachers, mariners—each one, . .	9
	128

With us, the social position of men of these crafts would be easily understood from the list itself; but, in forming our opinion from home experience, we should mistake the true social position of these men in their own neighbourhoods. Where there is no old aristocracy either of title, wealth, or talent, the social position of the class of men above enumerated is much higher relatively than in the older countries of Europe. They are all probably considered quite as good as any of their neighbours, and occupy as high a position in the society of their county or city as any of the county or borough members of the British Parliament do in theirs.

The preponderating interest in point of numbers, as appears from the above list, is that of the agricultural body—though, from the complaints I have heard the farmers make of the intermeddling of the lawyers, I suspect the latter have more to say in the direction of

affairs than the mere weight of their numbers would justify or imply. As with us, the county members are slow, and difficult to move, though, when they once take a thing fairly up, they are sure by their numbers to carry it.

I have adverted to the fact of Albany, like New York city, being founded by the Dutch, and of the existence of much Dutch blood still among the population. It is interesting, however, on inquiry, to ascertain how largely the English blood predominates among the influential parties in the State. Of the 128 members of the Assembly of 1850, the descent on the father's and mother's side was as follows:—

	By the Father's side.	By the Mother's side.
From England, . .	77	72
... Wales, . .	10	5
... Scotland, . .	10	11
... Ireland, . .	8	9
... Holland, . .	11	9
... France, . .	7	7
... Germany, . .	4	10

So that five-sixths of the whole were from the British islands by the father's side, and about two-thirds of the whole from England. In these numbers it is singular to observe how very few of German descent are sent to the Legislature, notwithstanding the large number of this people which is to be found, especially in the western part of the State, and the very long time they have been settled along the Mohawk Valley. It is not less striking that so few of Irish descent should yet have attained, even in this new world, to a position entitling them to aspire to the office of a legislator, or at least have sufficiently obtained the confidence of the electors to secure their appointment.

Of the same 128 members of Assembly, 96 were born in the State of New York; the remaining 32

were born in the different States of New England. Most of the persons elected are in the prime of life, there being—

Under 30 years of age, . . .	13
Between 30 and 40	39
... 40 and 50	40
... 50 and 60	24
... 60 and 70	8

A list, published by order of the Assembly, from which I have condensed the above particulars, gives also the *weight* of each member in pounds. I have no doubt the column of weights must have a significance in the eyes of the members themselves, or of their constituents, otherwise it would not have been published. I find the heaviest member weighs 272 lb., and the lightest 110; but it would savour of impertinence to suppose that their weight in pounds had anything to do with the character of their speeches, with their influence in the house, or with the estimation in which they are held by their constituents. The truth is, I believe, that to persons at a distance, who have not the opportunity of seeing a man in person, a knowledge of his age, his extraction, and his weight, gives the means of forming a more clear and definite idea of his personal appearance than almost any other data could do. A man's weight tells far more as to personal appearance than height does. Hence, in speaking of the properties of horses, a common question in this country is, not how many hands high is it, but how many pounds does it weigh. This sounds odd to us at first; but a little practice in judging of horses by their weight, in connection with other qualities, enables us to form very clear ideas as to the appearance of an animal, what he is fit for, and whether we need to inquire more after him. In reading debates, which almost every elector in the State does, it is natural that a desire should arise to know something of the personal appearance of a favourite or dreaded

speaker, and it is probably to aid in this conception that the weights of their representatives are taken and circulated among them.

The government of the State in 1850 was Whig,* but parties were very equally divided, and the democrats had a majority of only one in the Assembly. Every party question, therefore, was a new occasion for a struggle. In regard to minor points, victory was sometimes by finesse persuaded to alight on the standard of the minority, as when, upon a Monday morning, it was perceived that a few of the democrats, thinking all was safe till the Tuesday, had not come up from home, the Whigs took advantage of their temporary strength to force on and carry a measure, which they would have lost by another day's delay. And, in these annoying circumstances, it was amusing to see the unhappy democrats talking against time till the last train had arrived, and hope no longer remained of the arrival of their friends. Then at length the claims of dinner were yielded to, and the victory was with the Whigs. To prevent, or to insure such results as this, constant *caucuses* were held by either party, and the tactics and votes of each day talked over and determined.

But the question of slavery—and especially its introduction into California and New Mexico—was the topic mainly agitated during the first half of the session. Not that either the democrats or the Whigs durst support the views of the southern slave-holders—public opinion was so much changed on this question, that every public man was desirous of leading in favour of the free movement, that he might not be thrown out in the race. Each party, on this question, was desirous rather of outbidding the other for popular support, and of making political capital out of it for themselves. This was certainly a very encouraging indication of the real feelings of the majority

* Which it still is in 1851.

of the State of New York upon the subject of slavery. The growing tendency in this State is certainly in favour of personal freedom all over the Union.

An observant Briton, who resides for a sufficient time in the State of New York—and more especially if he keep himself aloof from the bustle and excitement of New York city—will become acquainted with many things which will arrest his attention and awaken thought; and in no more direct way will his attention be drawn to the peculiarities of the country than by the topics which day after day are brought under the consideration of the Legislature of the State.

The equality of all religious sects in the eye of the law, the equal personal bearing of all denominations, and their independence of each other in all respects, is a point which early strikes the European. All have an equal right to their religious opinions, whatever they may be; few hesitate to avow them; and though I have often heard people differ and argue on religious points, I do not recollect to have anywhere observed a single expression, either by word or feature, which seemed to imply that one of the disputants thought himself superior to the other because of the opinions he entertained, or that he had a better right to entertain them. I was most struck with this circumstance in the State of Massachusetts, where the freedom of speech upon religious matters will often startle the orthodox stranger.

The education of the masses of the people is another point in which New York State has recently taken a forward step of much moment, which, if securely maintained, cannot fail to influence—as all the forward movements of our North American kindred, when tried and secured, must influence—in an important degree, our proceedings at home.

As early as 1795, an appropriation of 50,000 dollars a-year, for five years, was made by the Legislature

of New York, for the establishment of common schools. In 1800, there were already 1350 schools, with 60,000 pupils; but the Legislative appropriation was then given up. In 1805, a grant of half a million of acres of land was set aside, and, subsequently, shares in the Merchant Bank of New York, to form a fund which was to be divided among the school districts as soon as the revenue amounted to 50,000 dollars a-year. The proceeds of all State lands sold since 1821, the interest of certain moneys obtained from Congress, and an annual grant to the permanent capital of 25,000 dollars from the income of the canals, have since been added to this fund, which now amounts to about 300,000 dollars a-year,* besides 100,000 dollars a-year appropriated to colleges, academies, normal and Indian schools, &c.

In 1812, the common schools were first established, and it was provided that each township, at a public meeting, should determine whether they would accept their share of the public money, and raise twice as much themselves by local taxation. But as this plan did not work, it was subsequently ordered that each county should raise twice the sum granted by the State, and that the whole should be divided among the school districts, according to the number of children between five and sixteen years. This order was afterwards, I believe, withdrawn. There were in

	Schools.	Pupils.
1816, .	2,631	176,449
1822, .	6,865	342,479
1842, .	10,886	603,583
1847, .	10,621	775,723 †

and the school libraries contained 1,338,000 volumes.

* In 1848, it was 285,000 dollars, and the amount of *public* money received from all sources by the common schools was 858,594 dollars, of which 91,000 were appropriated to the school libraries.

† This indicates the number of individuals who have been at school during the year, but the average actual attendance was much less. Thus, while nearly 200,000 attended the schools of New York city, the average attendance was only 32,000.

Up to 1849, the system adopted in the school districts was nearly as follows:—The electors of the district, in public metting, chose three or more school trustees. These trustees employed a teacher, qualified according to their judgment, for a stipulated number of months, and at a fixed rate of salary. If the sum received from the State funds, together with an equal sum raised from the district, was insufficient to pay this salary, the trustees apportioned the remainder as a rate upon those whose children attended school, in proportion to the number of their children so attending, and the number of days they have attended—exempting such persons as were too poor to pay, and making their shares a charge on the district.

Two evils were found to attend this system. It was a difficult and invidious duty to determine, to the general satisfaction, who were too poor to pay their school-rate. It was also found that, to charge the rate in proportion to the number of days at school, though obviously just, acted as a direct premium on withholding the children altogether, or sending them to school only a small part of the year. Hence, of the 775,000 pupils, about

200,000	were at school	less than 2	months.
200,000	...	 4	...
150,000	...	4 and less than 6	...
100,000	...	6 and less than 8	...
100,000	...	from 8 to 12	...

The latter evil was regarded as a serious disadvantage to the State, in which education is considered necessary to the preservation of liberty. Besides, the examples of Connecticut, Vermont, Massachusetts, Rhode Island, New Hampshire, and Maine, in which, from the possession of large funds, the schools are nearly free—that of Indiana, in which the people had recently decided in favour of free schools—that of Wisconsin, which has made provision for a system of free schools—and even that of South Carolina in which the schools are *free to the free*—these examples

pressed upon the New York Legislature the advantage of a system of common schools, free to all. By such a system the trustees would be relieved from the disagreeable duty of pronouncing who were poor, and parents from the equally disagreeable one of paying special rates for the education of their children.

By a law passed in 1849, therefore, the common schools of the State were all declared free. They were ordered to be kept open at least eight months in the year—the average period of all the schools taken together for several years past; and each district was to levy, by tax upon itself, twice as much as it received from the State fund. As the law imposed a new tax, it was submitted to the whole people, and was passed by fifty-five counties against four, and by a clear majority of 157,000 votes. It went, therefore, into immediate operation; but when the tax came to be imposed, it awoke so much opposition that, before a year was over, petitions and remonstrances were presented to the Legislature and School Board from not less than 2000 of the school districts.

The selfish who had no children, who had few, or whose children had already left school, are of course among the complainants. But to the thinner peopled and newer districts the law was really a grievance. To keep the school open for eight months, when perhaps two months had been the period before, caused a sudden increase of taxation far beyond the mere double of the State allowance required by law. What the State gave, when there were few children between five and sixteen was also very small, so that there was no visible compensating advantage for the heavy taxation in these districts. To remedy these evils, it has been proposed to levy a general county rate double of the State allowance to the county, which together shall make up the whole legal county education fund, and then to divide the whole among all the districts in proportion to the

number of pupils at each school. Thus the pressure will cease to be unequal on the poorer districts, and the obstacles on the part of parents and others will, it is to be hoped, disappear when these and further alterations, which will doubtless hereafter suggest themselves, shall have been introduced. While I write, however, the agitation on the subject is still very strong; and it was made by many a party-cry in connexion with the elections for 1851.

It will interest the British reader, I think, to have an idea of the amount of tax which it will be necessary to raise, or the rate of taxation which will be necessary to maintain this free common-school system in the State of New York.

The present annual income of the common school-fund from all sources is, in round numbers, 300,000 dollars.* Twice this sum gives 600,000 dollars as the sum to be raised by tax, which on 3,000,000 of people makes one-fifth of a dollar — 20 cents or tenpence — a-head on each inhabitant. A tax of tenpence a-head on the 20,000,000 of Great Britain would raise a yearly school fund of £833,333, or on the 30,000,000 of the two islands of £1,250,000 sterling. Do all our parish and common-school endowments, and parliamentary grants united, approach to anything like this sum?

But in the State of New York, and elsewhere, the tax is levied on property. Now the total aggregate valuation of real and personal estate, according to official documents, was in 1849, in the State of New York, 666,000,000 of dollars. A tax of 600,000 dollars upon this valuation gives one dollar for every 1110, to be paid by each holder of property — supposing the tax to be equally divided among all the property of the State.

Our direct property-taxes are paid upon income. We shall understand the weight of this tax better, therefore, by converting it into an income-tax.

* In 1847 it was 296,000 dollars, and in 1848, 282,000 dollars.

The legal interest for money in the State of New York is 7 per cent; but 6 per cent, or sixteen and a half years' purchase, is the rate at which the value of incomes is usually estimated. A tax of one dollar on 1110 dollars of property is equal to 16½ dollars on 1110 dollars of income—or, it is equal to an income-tax of 1½ per cent on the entire community.

Our income-tax of 3½ per cent realises £5,600,000; a similar tax of 1½ per cent, on incomes above £150 a-year, would realise £2,400,000—so that the State of New York is at this moment taxing itself as highly as this sum yearly would be to us, in order that all its children may obtain education free.

It will, of course, be understood by the reader, that this average tax of 1½ per cent on the whole property of the State will fall heavier, or be more, on poorer localities, and lighter, or be less, upon the richer—as it is levied, not by the general government, but in the form of local taxes imposed by local authorities. Previous to the passing of the general act making education *free* in the whole State, the system of free-schools had already been voluntarily adopted in twelve large townships, comprising a population of half a million, which taxed themselves for the purpose of carrying out the plan.

In these twelve towns, in 1848, the average school-rate levied amounted to sixteen cents on the 100 dollars of valuation, or 1 dollar on every 625 dollars of property. The highest, lowest, and average rates were as follows:—

	On 100 Dollars Valuation. Cents.	On 100 Dollars Income. Dollars.
Lowest rate, at Brooklyn, .	67·10	1·07
Highest rate, at Hudson, .	30	4·95
Average of twelve townships,	16	2·64

While in some districts, therefore, which are the seats of much property, the rate was at that time, and will con-

tinue to be, less than our calculated average of 1½ per cent on the whole income of the State; it will in other districts equal, or exceed, an income-tax of 5 per cent on all classes of the resident population.

It is really very creditable to the people of this State, that they are willing to pay so high a tax for the common-school education of all.

In free countries, where the power is already, as in North America, altogether in the hands of the masses, or where, as in our own, the power of the masses is a growing and increasing power, it is a duty the State owes to itself, and its liberties—one which the government of the day owes the people—to place instruction so generally within the easy reach of the masses, that they may be trained up to the reasonable exercise and guardianship of the public rights of freemen, rather than be left to become the blinded instruments of selfish demagogues or designing priests, and probably the crushers of constitutional liberty, both political and religious.

But there are, besides this general good, a thousand circumstances in everyday life which prove the money-value of instruction in the masses, even to the holders of property and the givers of employment. One of the boasts of Scotland in reference to its agriculture has been, that, though far later in beginning to improve, and enjoying far fewer advantages of climate than England, the native intelligence and superior education of its Lowland peasantry has enabled it to overtake, and to equal, if not to surpass the most successful farming of the southern kingdom. But already, in some counties, complaints begin to be made, that the defective education of the farm-servants forms a serious hindrance to the introduction of those better methods, and still more improved means of culture, which the peculiar pressure of the times demands. And who can doubt that the ignorance of the agricultural labourers, in the southern

counties, is an actual source of money-loss to those who employ them? The more valuable labour which they would give, if better educated, would far more than repay the employer for the small addition to his outlay which a tax to uphold free-schools for all would entail upon him. My reader may smile at the ignorance of my friend's servant in this English county of Durham, where I write, who, when asked two days ago if the whole of a particular kind of hay was consumed, declared that "there was not a *sentiment* of it left." Yet this man belongs to the better educated class of our labourers. A Scotch hind would not have made such an improper use of a word; but a Dorsetshire labourer, if he had ever heard the word at all, would probably have no idea whatever either of its meaning or of its use.

It is maintained by some among us, that the voluntary principle is sufficient to provide both schools and clergy for the whole people. But what a profound study of human nature teaches, as to the difference between the religious principle and the desire of knowledge in the human breast, is fully confirmed by the experience of all the new countries of North America. The former possesses a certain strength in every breast, and is often most powerful where the latter is least so. The reverence for a Supreme Being, and the necessity of some form of worship, is inborn; the desire for knowledge has in most cases to be created by the imparting of instruction, and increases with what it obtains or collects. Thus, while religion may support itself, and may be left without aid from the State in a large and populous community, it is not so with education. Not feeling the want of knowledge, the people may be content to remain in ignorance. But as it is the interest of the State that the talents of every citizen should by education be made most available for the good of all—as it is, in fact, a necessity to the permanent existence of a free State—it

becomes a sacred duty of its government to see that the means of instruction be provided for all.

If the United States do really succeed in getting ahead of us in moral worth, material advancement, and happiness-giving institutions, it will be as much from the early recognition of this principle, and the general adoption of it, as from any other benefit they enjoy.

From what I have said as to the large amount of the school-tax in the State of New York, it may be supposed that the total taxation in this State is large; and, according to the published documents for 1849, such is, to a certain extent, the case. The total taxation of the whole State for 1849—including State, county, and township taxes—amounted to 5,500,000 of dollars, which, on a valuation of 666,000,000, is a little more than four-fifths of a per cent. It would be equal to paying in England 16s. 8d. for every £100 of property, or to an income-tax of 13½ per cent—supposing the property to yield 6 per cent, or be worth 16½ years' purchase on the whole.

But this rate of taxation varies in different counties; for, while the State taxes are the same everywhere, the county and township taxes vary, as with us. Hence the total taxation in some of the following counties is greater, in others less, than the average above given. Thus, it amounts in the counties of—

	Dollars.		Valuation. Dollars.	On Property. Per cent.
Hamilton, to	8,884	on	332,000,	or 2⅔
Albany, to	282,000	on	17,393,000,	or 1⅔
New York, to	2,715,000	on	254,000,000,	or 1 1/10
Ontario, to	85,000	on	16,747,000,	or ½
	The average being . .			⅘

As a tax on property, this average is *nominally* light; but were a tax of the same name (four-fifths of a per cent) imposed upon all the property of Great Britain, real and personal, it would produce a much larger sum than we should at first suppose. The fee-simple value

of all the real property in Great Britain, in estates above £150 a-year, which is now rated to the income-tax, amounts to about £2,382,000,000. Four-fifths of a per cent on this sum would realise £19,000,000 sterling; and were all the property, real and personal, in this island, below £150 a-year, and the amount of property in Ireland, rated in a similar way, and fairly collected, our entire revenue of £50,000,000 would probably be obtained—as the revenue of the State of New York now is—from this one property-tax only.

Is taxation, then, in the young State of New York, in which the salaries of all public officers are defrayed by the small expenditure of 750,000 dollars—is taxation in that State already as heavy as with us? This question deserves a little closer examination, especially by us in Great Britain, who consider ourselves taxed very far beyond every other nation in the globe.

The taxes in the United States are of three kinds.

First, The *national* taxes, which are of the nature of our customs-duties, and are levied by United States officers, according to an act of Congress, upon imports from foreign countries. These amount at present to about 30,000,000 of dollars, or something over a dollar a-head upon the entire population. In Great Britain, the same customs-duties amount to £20,000,000 sterling, or upon the 30,000,000 of the two islands, 13s. 4d. a-head, or three dollars—being three times heavier than in the United States.

Second, The State taxes, which, in nearly all cases, are levied by a rate on the estimated value of all property, imposed by an act of the State Legislature.

Third, The county and other local taxes, which are levied by rates imposed and apportioned by the electors of the district in which they are levied.

These two latter classes of taxes amount in the State of New York to about *two* dollars a-head of the population.

With us, deducting the £20,000,000 of customs, there remain of—

Imperial taxes, . .	£30,000,000
Poor-rates, . . .	5,000,000
Church, county, and highway rates,*	2,500,000
	£37,500,000

This, upon the 30,000,000, amounts to 25s., or nearly six dollars a-head—also three times greater than in the State of New York.

These considerations appear to show that the taxation is in this country three times heavier than it is in the State of New York.

But there is another side to the picture.

First, The State and local taxes in New York are levied on property, and amount to four-fifths of a per cent on the whole valued property of individuals in the State. But we have reason to believe that a similar valuation and rating of all property, real and personal, in Great Britain and Ireland, would yield a revenue of about £50,000,000 sterling—would equal, that is, all our imperial taxes.

Second, The national taxes paid in New York State, at a dollar a-head, amount to 3,000,000 of dollars, which is equal to a property-tax, on the 666,000,000, of one dollar on every 222 dollars, or something less than half (nine-twentieths) a per cent. Such a tax with us—if four-fifths of a per cent yield £50,000,000—would give an income of £28,000,000 sterling.

But, our imperial taxes being already provided for, we have £28,000,000 to pay the £8,000,000 of poor, county, and highway rates — that is, we have a surplus of £20,000,000.

According to this way of viewing the case, therefore,

* Church-rate, £500,000; county-rate, £500,000; highway-rate, £1,250,000.

the taxation in this country is so much lighter than it is in the State of New York, that, were we taxed in equal proportion, we should have an annual surplus of £20,000,000 sterling, equal one-fourth part of our whole taxation.

It may be said, that property in the United States, when valued for the purposes of taxation, is always under-estimated. But the same is true also among ourselves in almost all cases, so that no very large error in our result would arise from a fair allowance on this account.

Among our burdens in Great Britain, I have taken no notice of tithes; because I must express my belief that, in proportion to their property, the people in this State incur yearly a voluntary expenditure for the support of their clergy, and for the building and upholding of their churches, equal among them to the united fixed tithes of the established and voluntary contributions of the dissenting churches among us. There is no lack of support to religious teachers, as a body, however much individuals may occasionally be under-paid.

But we cannot, in fairness, leave the question here. The contrast between the two countries is brought out more strongly, I believe, by following up this question, than by any other single comparison that can be instituted.

The *people* in the State of New York, as I have shown above, pay per head only one-third of the taxes they pay per head in Great Britain.

The *property* in the State of New York pays upwards of one-fourth more * than it does in Great Britain.

In the United States, the taxes are lighter on the

* Our imperial taxes, which, exclusive of the customs-duties, amount to £30,000,000. This sum, with our local taxes, taken at £10,000,000, make altogether £40,000,000; while a property-tax of four-fifths of a per cent, such as is paid in New York, would raise, we have supposed, £50,000,000.

individual, and heavier on the property; with us, they are lighter upon the property, and three times heavier upon the individual. As the possessor of realised property, I am better off, as regards taxation, in Great Britain; as a possessor of health only, and strength to labour, I am better off in the United States.

Then, again, in the United States every citizen of full age has equal political power—votes at the elections—and may be sent as a representative to the legislatures, though he do not possess a dollar. With us, a man must have property before he can vote, and more before he can be elected to the Legislature; those who have no property are excluded both from the elections and from the Legislature.

Thus the great contrast between the two sections of the Anglo-Saxon race on the opposite sides of the Atlantic is this—on the one side the masses rule, and property pays; on the other side property rules, and the masses pay. The paradise of the poor man is on the one side of the water, that of the rich on the other.

From this result we derive a confirmation of the advice which experience enabled the New Brunswick settlers I have already mentioned to give to those who think of emigrating, "If you find yourselves comfortably situated at home, you had better stay there."

If it be considered possible or desirable to assimilate our condition—as to taxation—to that of the United States of America, it is not to a diminution of the expenditure so much as to a re-adjustment of the taxation that our financial reformers ought to direct their attention. If property rule and expend, it is surely more fair that property should also pay, than that property should be made to pay and yet have no power at all, as is the case among our American cousins.

Whatever the ultra-democratic rights-of-labour party in the States may say, the principle of human nature

upon which *they* rule is precisely the same as is followed in our own legislature. Where the power is with the property, it taxes the masses; where it is with the masses, they tax the property. In both countries there is a jealousy of the growing influence of the other. The most just arrangement would divide the power and the burdens in some well-considered way between the two.

Among other points to which a stranger's attention may be drawn, the banking system, as it is conducted in this State, is not without interest. There are in the State of New York 113 banks, all chartered by the legislature. They are banks of discount rather than of deposit, and are organised in a way which is not only simple to the understanding, but very safe both to the bankers themselves and to the holders of their notes.

The company or individual proposing to establish a bank applies to the legislature, stating the amount of capital it possesses; and if everything is satisfactory, obtains a charter of incorporation. The party then deposits in the hands of the State comptroller in Albany, deeds, bonds, certificates of stock, or other good and readily convertible securities, for the amount of money specified in the charter, and upon which it is intended to trade. These the comptroller preserves, and he hands to the party, in return for them, their value in notes of various names, engraved with the title of the new bank, and such appropriate design as may be selected. The party now commences business. Their capital is already invested in stocks, bonds, &c., and they draw the annual interest of these. The notes which represent this stock they again issue in loans, or in discounting bills, or in any similar way; and thus they make a second profit upon the same money. The legal interest in the State is 7 per cent, and thus a prudent money-dealer may make at least 12 per cent of his money altogether. But if he be imprudent, and

either speculate himself, or aid in the speculations of others, on bad securities, he may involve himself and lose all. But, in this case, the public who hold his bank-notes are safe; the comptroller retains the means of paying for them in full; and if a crash come, he realises the securities in his possession, as it can be prudently done, and calls in the notes. Such banking is simple, is safe to the public, and may be profitable to the bankers when bad debts are avoided. But, as I have said, these banks offer no security for deposits beyond the known honour and good character of the parties by whom the business of any particular bank is carried on, and the responsibility of each shareholder or partner in proportion to his share.

The trade in money is not yet free in any of the States, but usury laws exist, and a maximum of interest is fixed, which is the same for all transactions, whatever the security may be. The following table shows the legal rate of interest, and the penalty for usury, in the several States of the Union:—

State.	Legal Interest.	Penalty for Usury.
Maine, . .	6 per cent.	Forfeit of claim.
New Hampshire,	6 ...	Forfeit thrice amount unlawfully taken.
Vermont, .	6 ...	Recovery by action, with costs.
Massachusetts, .	6 ...	Forfeit thrice the usury.
Connecticut, .	6 ...	Forfeit whole debt.
New York, .	7 ...	Forfeit whole debt; contracts void.
New Jersey, .	7 ...	Forfeit whole debt.
Pennsylvania, .	6 ...	Do. do.
Delaware, .	6 ...	Do. do.
Maryland, .	5 ...	Contract void.
Tobacco contracts,	8 ...	
Virginia, .	6 ...	Forfeit twice the usury.
North Carolina,	6 ...	Forfeit twice the usury; contracts void.
South Carolina,	7 ...	Forfeit interest and usury, with costs.

State.	Legal Interest.	Penalty for Usury.
Georgia, . .	7 per cent.	Thrice the usury.
Alabama, .	8 ...	Forfeit interest and usury.
Mississippi, .	8 ...	Usury recoverable in action for debt.
By contract, .	10 ...	
Louisiana, .	8 ...	Contract void.
Bank interest,	6 ...	
Contract, .	10 ...	
Tennessee, .	6 ...	Do.
Kentucky, .	6 ...	Usury recoverable, with costs.
Ohio, . .	6 ...	Contracts void.
Indiana, . .	6 ...	Fine double the excess.
Illinois, . .	6 ...	Forfeit thrice the interest.
Contract, .	10 ...	
Missouri, . .	6 ...	Forfeit interest and usury.
Michigan, .	7 ...	Forfeit usury and one-fourth of debt.
Arkansas, .	6 ...	Usury recoverable and contract void.
By agreement,	10 ...	
District Columbia,	6 ...	Contract void.
Florida, . .	8 ...	Forfeit interest and excess.
Texas, . .	8 ...	Forfeit thrice the excess.
By contract, .	12 ...	
Wisconsin, .	7 ...	
By contract, .	12 ...	
Iowa, . .	7 ...	Do. do.
By agreement,	12 ...	

The penalty for usury in the State of New York—voiding the contract and forfeiting the whole debt, nearly the same law as exists in New Jersey, Pennsylvania, and Delaware—was unfit to stand against a single commercial crisis in a country where the people yearly and directly influence the legislature, provided that, during that crisis, one flagrant breach of commercial faith became generally known. Such was the case during the late crisis of 1848 and 1849. An extensive commercial house in New York became embarrassed, and applied to certain London capitalists to aid them. This was at once agreed to, with the observation that, "at

this particular time, when money is so scarce, it is worth more than your legal interest of 7 per cent, but you shall fix the rate yourselves." This was done by the parties receiving the accommodation, and the transaction was completed. But when, towards the close of 1849, the money was to be repaid, the New York house refused to pay, denounced the transaction as usurious, the contract void, and the principal sum forfeited, in terms of the State law. But all New York was shocked with their bad faith, and sent the repudiating party to Coventry. Everybody knew that the usury promised was the fair price of money at the time, paid by thousands at that crisis both in England and America, to save themselves from bankruptcy; and a bill was forthwith brought before the Assembly at Albany to assimilate the law to that of New England, and to make it no longer a cloak for fraud, and an excuse for dishonesty and afore-thought-swindling.

There is not only much energy, but much moral weight in the New England character. New York, as in this case, and in that of its free-schools, imitates and adopts, and perhaps carries farther, what has already been proved in New England. Canada, again, and the more western States, imitate New York as their original; and thus, by another less direct process than that which I have adverted to in the preceding volume—of sending drafts of their most enterprising people—do the poorer States of the east influence and propel, even in advance of themselves, the richer, wider, and more populous States of the western and north-western country.

CHAPTER XXIII.

Churches in Albany.—Rivalry in building and ornamenting them.—Yearly engagement or hiring of the clergy.—Periodical hiring of teachers.—Their unsettled character.—Annual meeting of the State Agricultural Society.—Characteristic discussion.—Training of the young, and fear of each other.—The Shakers.—Watervliet.—"Shaker Yarbs."—The Thomsonian system.—Jealousy of the Shakers.—Charges against them.—"Mother Ann Lee," foundress of the Shakers.—Their numbers and peculiar doctrine.—Their apprehended influence on the elections.—Law against the accumulation of property or influence.—How they are recruited.—Kinderhook.—Slavery times on the Hudson.—Effects of emancipation.—Opinion of the New York Legislature in regard to slavery.—Their complaints against the South.—Charges made against Great Britain.—Parallel between the proceedings of Great Britain and the United States as to slavery and the slave-trade.—Slavery-increasing tendency of the Union.—Effects of the American revolution on the slavery of the British empire.—Call upon Great Britain in reference to American slavery.—Difficult position of the slaveholders.—Agricultural improvements in progress.—State Agricultural Society.—Circulation of its reports at the public expense.—Proposed agricultural college.—Opposition of the farmers.—Natural history survey.—Number and value of the volumes.—Uncatholic tendency of American science.—Revision of the code of the State.—New code of procedure.—Objections made to it.—Greatness of the work.—Tendency to litigation.—Anti-renters.—Canvassing for public office.—Albany penitentiary.—City of Troy, its prosperity and prospects.—Railway to Canada.—Annexation feeling in New York.—Resolutions in the State Legislature.—Dutch words in common use.—Other peculiar words.

Sunday, Jan. 13, 1850.—The churches in this city are large, comfortable, well filled, and usually ministered to by clergymen of very considerable talent. Here, as in

most of the older New England towns, a manifest rivalry appears among the richer congregations in the building and ornamenting of their churches. The Presbyterians, Methodists, and Congregationalists, (Independents,) equal the Episcopalians in their attention to stuffed pews, easy cushions, and carpeted aisles—to organs, choirs, and the engagement of professed singers—to towers, steeples, and sonorous bells—and the old Dutch Reformed are as attentive to comfort as the rest. All the churches are well warmed; and, even in this frosty weather, the ladies are seen here and there in the pews busily plying their *fans!*

John Wesley would scarcely believe his eyes were he to wake up and see the fine Gothic church which the Methodists have just finished at Newhaven in Connecticut. The old Presbyterian congregation here, in Albany, have nearly completed an expensive and beautiful church, with an ambitious tower, while their old one was still large enough, sound enough, and sufficiently comfortable. But the Romanists are outdoing them all, and probably inciting all the other sects, by the magnificent cathedral they are erecting on the highest part of the city. They have here, I was told, complainingly, as in other countries, the art of squeezing out of the hard earnings of their humblest followers a liberal quota towards the good work.

The Independents or Congregationalists, so strong as a body in New England, are only gaining a footing as yet in the State of New York. The old church, about to be abandoned by the Presbyterians, has been purchased for the first congregation in Albany on the Independent principle.

I attended the Episcopal church of Dr Potter this morning. The congregation was large, very respectable in appearance, and apparently devout. The Doctor himself, in his figure somewhat, but more in his voice and

earnest sincerity of manner, reminded me of Dr Sumner, the present Archbishop of Canterbury. In the afternoon, I was conducted by a friend to a Presbyterian place of worship. Dr Campbell, who officiated, had a peculiarity of manner which at first struck me unfavourably, exhibiting, perhaps, an extreme of that something more than self-possession which Yankee preachers occasionally display; but he was a man of much talent, and delivered an eloquent and impressive sermon.

The relation between the teacher, whether lay or clerical, and the taught, is not so enduring here as with us at home. Engagements are a matter of frequently-repeated and only temporary bargaining. Clergymen are engaged for one year only. If both parties are pleased, he is engaged again, and will sometimes remain, upon renewed engagements, for twenty years. But the average in New England and the State of New York, I am told, does not exceed ten years. Except among the itinerating preachers of the Methodists, this system of engagements would not find favour, I fear, with the clergy of any of our religious denominations.

In like manner, the trustees of a school district engage a teacher. Neither party is bound, except by express agreement, for more than three months. A year in a place is considered a long period for a teacher to remain, and it has hitherto been rare for a teacher to follow the profession for more than three years. He has then probably saved a few dollars, and quits the ferula for the law, for medicine, for divinity, or for some more promising or healthful pursuit. Probably from deficient ventilation of the school-houses, or some other remediable cause, the schoolmasters of the State are said to have been hitherto especially subject to bronchitis and disease of the lungs.

With all the admirable provisions for common schools in the State, this unsettled character of the teachers must

hitherto have proved a great hindrance both to the correct instruction of the children and to their steady and rapid progress. This is now in course of amendment, however. A normal school is in full and excellent operation at Albany. It is supported by an annual grant of 10,000 dollars from the funds at the disposal of the Legislature; and about two hundred male and female teachers — so many from each county of the State — are taught gratuitously. About one hundred teachers, on the present scale of the school, will be sent out every year. These will no doubt gradually spread over the country a better race of instructors; but whether or not they will either form a settled and permanently resident body of men, adhering to teaching as a profession, will depend much upon the chances of more rapid advancement in other directions which may happen to fall in their way.

Jan. 17.—I yesterday attended the annual meeting of the New York State Agricultural Society, and this evening was present at the delivery of the annual address by the retiring president, Mr King, member of Congress for this State, and an old Harrow boy. This custom of a yearly address by the retiring president, giving an account of what has been done under his auspices and during his reign, is very useful, and very much deserving of imitation. It affords an opportunity, not only of recommending the general objects of the Society, but of specially drawing attention to those points in the rural practice of the several parts of the State which are most likely to be profitably amended. It makes it necessary also for the Society actually to do something, for the president to have some knowledge of, and to take an actual interest in, what is done, in order that he may be able to explain and discuss and enforce the steps it takes or recommends. The proceedings at the general meeting were very creditable to the Society —the desire for progress appeared to be very great—the

means taken to promote it energetic and enlightened, and the advances actually made very considerable.

A discussion arose in some measure characteristic of the tone and the progress of democratic sentiment in the State. Hitherto, the ex-presidents have been members the Executive Council *ex officio*, and the motion which gave rise to the discussion was to do away with this privilege. The rule objected to removed a certain number of the office-holders of the Society from the control of the popular vote—a thing inconsistent with the general practice in the State, which is gradually abolishing all permanent offices and all corporations which enjoy special and permanent privileges.

I was struck, however, with the gravity and decorum with which the discussion was carried on, and with the apparent self-possession of all the speakers. It is partly to the general acknowledgment of no higher rank than his own that the absence of our insular nervousness in the American speaker is to be ascribed; but partly also to the undisciplined and uncontrolled way in which children are brought up.

A key to some part, at least, of this running wild of the children was afforded me by a little circumstance which occurred to me in Albany. A friend of mine had a boy of twelve or thirteen years employed in his office to run messages, and do other small affairs. This boy several times brought me notes from his master, and while waiting for an answer, he would walk first to one table and examine the books and papers, then to another and do the same; and, finally, to the mirror and arrange his hair in the coolest manner imaginable. I was amused with this for one or two visits. At last I said to him, that, in my country, we did not approve of little errand-boys taking such liberties, and showing so much conceit when they came into a gentleman's rooms; and I requested that, when he came with messages to me in future, he

would sit down quietly till I wrote an answer. The boy was amazed, but was very respectful ever after. His master told me nothing had ever mortified him so much, and, at the same time, done him so much good; but, when I asked why he had never set the boy right himself, he gave me no reply. On telling the matter to an American lady of my acquaintance, however, she asked me immediately—"Were you not afraid to speak to the boy in that way? That boy may be president of the United States yet." "And what then?" "Why, he might do you a great deal of harm." It was now my turn to look amazed. It is not a persuasion that it is best for the boy which restrains reproof, but a fear that it may be worse for the reprover. This fear of one another, I was assured by various persons, amounts often to a species of tyranny throughout this Union.

Jan. 19.—We have so often heard at home of the Shakers, as a sect distinguished only for odd customs and forms of worship, that I was here rather surprised on being informed "that the only localities in this State in which farming is carried on systematically, on a large scale, are the settlements of the Shakers." The peculiar organisation or domestic economy of the sect, among whom marriage is prohibited, is favourable to a system of large farming. They have plenty of land, and plenty of unemployed hands to till it; and, therefore, if possessed of sufficient skill, they are in a condition to try what agriculture, in the State, can really do. As a community, they are prosperous in their affairs, are rich, both in money and in lands, are skilfully managed, and are increasing in the number both of their members and their settlements. Though little could be done in the way of looking at farms while the ground was deeply covered with snow; yet, as I was anxious to see one of the homes of the sect, I accepted the offer of my friend Mr Macintyre to drive me out to-day in his sleigh to Watervliet,

one of their oldest establishments, situated some eight or nine miles from Albany. A recent fall of snow had made the sleighing good, but a piercing wind blew, which indisposed us on our arrival to much out-of-door examination.

This settlement of Watervliet consists of two thousand acres, generally light land. The farm-buildings are by no means so extensive as this breadth of land would require with us, nor was the stock either in number or quality such as I had been led to expect. It is in the tillage of the land that their strength is said to lie—in a kind of garden-husbandry, I suppose; but of the state of their land, from the covering of snow, I had no means of judging.

They possess an extensive range of well-built houses, occupying three sides of a long parallelogram. There are 316 members in this society of all ages, and in these buildings are contained their dwellings, workshops, and chapel. They received us with much attention and civility, and took us through several of their dwellings and workshops. All was scrupulously clean, and the workshops of various kinds were fitted up with tools and appliances of the most approved construction. They grow much broom-corn, and have a large manufactory of brooms; but they are particularly famous, at all their settlements, for their medicinal herbs and garden seeds. The former are extensively grown, carefully collected and dried, and neatly put up in small packets. As "Shaker Yarbs," they are celebrated all over the Union, and command an extensive sale. A medical system under the name of the Thomsonian, which requires no college learning in its professors, and makes use of herbs only, has obtained a considerable hold in the country, and promotes the sale of their herbs. These "Thomsonians" have an equal legal standing now with the more regularly bred practitioners in most of the States; and, so recently as 1849, a protracted debate took place in the Canadian parliament on a bill which proposed to give them an equal

liberty to practise also upon the lives of the lieges in the British provinces on the St Lawrence, and which was rejected only by a small majority. One would suppose that the extension of education rather favoured quacking than otherwise, from the freedom which is here granted to empirics of every kind. That this "herb system" has obtained a considerable extension among the people is shown by the fact, that large respectable-looking shops are met with which occupy themselves solely with the sale of the dried herbs and extracts.

The jealousy of the ultra-democratic party as to the independence of the people had lately awakened a considerable outcry against the Shakers. It was asserted that they were increasing, prospering, and buying land so fast, that they were forming a dangerous monopoly of the lands of the State; and, to give strength to the fear and indignation which this was intended to excite, it was added, that immoral practices were prevalent among the members of different sexes; and that the education given to the children was fitted to "lead into darkness rather than light." A committee of the Legislature was therefore appointed to make inquiry and report; and the result of their inquiry was, that all the charges were groundless, and that there was no cause for legislative interference. The matter, therefore, for the present, has been allowed to drop.

According to this report, which has something of the air of an "Apology for the Shakers," it appears that Ann Lee, the founder of the sect, was born at Manchester in 1736, was not taught either to read or write; worked, when young, in a cotton-mill; and was married to Abraham Stanley, a blacksmith, by whom she had four children, who all died young. In 1758, she joined the sect of a James Wardley in Manchester, which, from their jumping, whistling, and dancing exercises, appear already to have been called "Shakers." In 1770, she

had a revelation of God's will, to "dispense through her his power over all sin," and she was called "Mother Ann." In 1774, she received a special revelation to go to America, and soon after sailed for New York with eight of her people and her husband. Two years after, her husband deserted her and her faith, and married another woman.

She then, in 1776, with a few followers, took up her abode in the woods at Watervliet, and, after many persecutions in various parts of New England, died, and was buried at this place in September 1784, in the forty-eighth year of her age. "Thus ended," says the report of the Legislative Committee, "the earthly career of the woman whom the Shakers sincerely believe now occupies the form or figure which John the Baptist saw in his vision standing beside the Saviour!" What this means I do not pretend to guess.

There are in the State of New York three societies of Shakers, containing in all 962 individuals, and possessing 10,000 acres of land. In the whole of the United States there are eighteen societies, containing 4050 individuals. The females exceed the males about 10 per cent. During the last ten years, their numbers have increased very little.*

They profess an abstinence from all sensual and carnal gratifications, and therefore live in a state of celibacy—"to follow peace with all men," and therefore abstain from war and from party or political contentions—to strive after justice, honesty, and holiness, and therefore dedicate their persons and property to social and sacred uses, in one consecrated and united interest.

But their great article of faith is, that what Jesus was—"Christ in the male sex"—Ann Lee was also,

* In 1828, they had sixteen societies, in which the number of individuals was said to be 5400.—RAPP'S *Religious Denominations in the United States.*

"Christ in the female sex." As the natural birth requires the co-operation of the two sexes, so the work of regeneration and the new birth could not be accomplished until the second appearing of Christ in the person of Ann Lee!

This is much the same sort of stuff as Joe Smith tells his Mormons about the necessity of the American Christ which had been revealed in his own person.

When any one joins the Society, he must be free from debt; and when, after the necessary probation, he signs the covenant, he gives up the use and benefit of his property and his own services to the common support of the order, or family. Members occasionally leave them, however. In such cases it has been the custom to provide for them, on their retirement, to an extent approaching to the pecuniary or other benefits they have bestowed on the community. But, of course, such retirements are neither contemplated nor encouraged.

Their wealth is increasing, as one would expect, from such a system administered by prudent hands; and considerable jealousy has been excited against them by the idea that they might acquire a predominating local or county influence, which by-and-by might be brought to bear upon the elections. A law, passed in 1839, already renders it illegal for any one of their societies to hold real or personal property, either directly or indirectly, the annual value of which, after deducting necessary expenses, shall exceed 5000 dollars; and prohibits any person from being a trustee for more than one society at the same time. This law has not been violated; and it will probably be many years yet, before any injury to the political rights of the people of the State can be seriously apprehended from this peaceful though foolish sect.

I found a number of boys in one of the work-rooms busy packing up seeds and herbs. They appeared

cheerful and content. They are taught during certain hours in the day by the schoolmaster of the Society, and there is a considerable library of general literature for the use of all.

The members of the Shakers are partly recruited by individuals of both sexes, who occasionally leave the world and join them; but their principal accessions are from "destitute parents and orphan children, who, as a last resort, seek the Society." Until of age, young persons are bound as apprentices, and taught; and, when they grow up, are received into the Society, if they are so inclined. Among us at home, as a refuge for the destitute, their societies would find no lack of members. It is otherwise in the United States, where employment is plenty, and the means of making a livelihood are within the reach of almost every one inclined to be industrious.

Jan. 19.—I went out this afternoon to Kinderhook, about fifteen miles down the Hudson, a couple of miles within its left bank, and commanding a fine view of the Catskill Mountains. This township is the native place and present residence of Mr Van der Buren, the late President of the United States. Sprung from an humble origin, and commencing life as a village lawyer, he gradually rose to the distinguished position which, following nearly a similar career, the present President, Mr Fillmore, has more unexpectedly attained.

This district is rural, and not densely peopled; but, within the last twenty-five years, it has undergone remarkable changes in its agricultural condition and prosperity — which are the more interesting from their having arisen out of an important change in the social state. In 1825, slavery was abolished in the State of New York — the emancipation to be gradual in certain cases—and from that period the changes I allude to commenced. My host, Dr Beekman, remembered the times

of slavery, and the manners of those times well; and he told me many curious particulars of what things were then among the farmers on the Hudson, compared with what they are now.

"Those were the times when only the blacks laboured. The white man considered himself above labour. The work of the slaves had to support the white man and his family, besides themselves and their own families. With the useless mouths to feed, and useless backs to clothe, he was considered a successful farmer who could make both ends meet.

"It was then the custom for the white men, both old and young, of a neighbourhood, by 11 o'clock in the morning, to collect at the nearest public-houses. In many townships there were scores of these, and Kinderhook had its share. Here they remained talking and drinking till early dinner-time, returned again by five in the afternoon, and spent the evening, till probably midnight, in drinking, gambling, cock-fighting, horse-racing, or perhaps fighting among themselves. Idleness led the way to immorality, and to frequent ruin, on the part of the whites.

"But when the abolition of slavery came—'Who will till our farms?' it was asked; 'we shall all be ruined.' But gradually good sense overcame prejudice. The freed blacks were at first hired as labourers, but white labour gradually took its place—and now "the dignity of labour" is the watchword of a powerful party in the confederation. The sons of the farmer, instead of spending their time in idleness and dissipation, from a kind of necessity, became first producers, and afterwards intelligent interested improvers. Old uncomfortable houses gave way to new and commodious ones. The out-buildings were enlarged, improved, and made ornamental. Waste land has been brought into cultivation; fences erected that will secure the crops; the stock changed into objects of beauty as

well as profit, roads, bridges, school-houses and churches completed—all these things are creditable to us, as we are now an industrious, thriving, intelligent, moral and religious people. Such I have seen to be the fruits of free labour; and whereas in those days money to borrow could scarcely be met with, I know that the rural population of 4000, now living round this place, have at least a million of dollars lent, and at interest."

"This is the fearful ordeal which the growers of wheat by slave-labour, in Maryland and Virginia, dread to encounter; though experience proves it to be the sure way to independence, comfort, and wealth.

The people of the State of New York, generally, are of the opinion of my friend Dr Beekman; though they differ, of course, as to the steps which the General Congress of the Union can or ought to take with a view to the abolition of slavery in the sister States. In the Report of a Select Committee of the House of Representatives of the State of New York, presented to the Legislature in February 1849, it is declared, that "the institution of slavery is contrary to nature; is in violation of the sense of right planted in our hearts by the Author of our being; and is in contravention of the law by which the *voluntary* exertions of individual man become the means of general advancement."—"It degrades labour, the great source of national wealth; it paralyses industry, represses the spirit of enterprise, keeps all who are subject to its provisions in necessary ignorance, exhausts the fertility of the soil, and impoverishes those who depend upon it for their prosperity."

As respects the attempt to repress the discussion of the slavery question, they say—"It is alike the privilege and the duty of every citizen to testify against wrong in whatever form it may present itself. Shall the thoughts of a man be stifled in this community on a great moral question? Is he to stand dumb in the presence of what

he may deem a great wrong, because the expression of his resentment is offensive or unpalatable? The right is conceded, that we may sympathise with the oppressed of other lands. We are free to offer condolence to the broken-hearted Poles, to send money and arms to the oppressed Greeks; we may raise a threatening hand against the combined powers of Europe, if they attempt to reduce the revolting colonies of South America to subjection; but we are forbidden to utter a word against the oppression of three millions of our own people!"

Nothing can exhibit a more healthful tone of mind on the subject of slavery than this. And to the above paragraph is added the following expression of their grievances against the slave-ocracy of the south:—

"The north, with characteristic forbearance, has submitted to many wrongs, having their origin in the effort to uphold and strengthen the institution of slavery. For slavery, the Cherokees were driven from their homes, in defiance of a solemn treaty, and the faith of the nation violated before the world. For slavery, the sovereignty of New Jersey was trampled under foot, to admit its advocates on the floor of Congress. For slavery, the sacred right of petition was denied and scoffed at. For slavery, it was proposed that the mails should be rifled, and the post-office department of Government be converted into a grand system of espionage. For slavery, the ambassador of a sovereign State (Massachusetts) was driven by the public officers of South Carolina from her shores, and compelled to fly for his life. For slavery, Texas was wrested from a friendly nation; and for slavery, a bloody war was waged against Mexico, that has cost the nation many thousands of the lives of its citizens."

It is due, I think, to the people of the State of New York, that this expression of their sentiments on the question of slavery should be known more generally

among us. We see, and occasionally read, noble speeches —such as those of Mr Seward and Mr Mann, delivered in the last Congress—expressive of the opinion of individuals on this side of the question; and we know that large meetings are now and then held, in which the sympathy of numbers is expressed in behalf of the coloured man: but such things happen daily among ourselves, in reference to many public questions, without at all indicating the general bent of the national mind. But a well-considered opinion, repeated year after year, on the part of the Legislature of a State, may fairly be assumed as a representation of the general opinion of the people of that State; especially when the members of Assembly hold their office only for a single year.

I would pass lightly over a mode of viewing the slavery question, in its relations to Great Britain, which is taken up in this Report, and which is occasionally thrown in the face of the British traveller in the United States, if he venture to express an honest opinion on the question of slavery. "We owe the evil to Great Britain. She introduced it into the American Continent. It was a legacy she left us. We may curse you for sending it to us; but you have no right to blame us, because you find it among us."

Of course, there is much unreasoning anger and consciousness of guilt and blame in such an answer as this; and yet there often appears an evident labouring—even where silence would better become the dignity of the occasion—to magnify and accumulate proofs of the great guilt of England in reference to slavery and the slave-trade in America. It is plainly a source of gratification to many to darken her conduct, as if the shade of their own guilt became paler as her blackness became more intense.

The Legislative Report, from which I have made the above admirable extracts, commences after this fashion, as if, after spueing a little filth upon us, it were thought

that the southerners would bear more patiently the plain truths they were about to speak to them.

Now, I believe there are not many persons in Great Britain at present—unless they are in some way interested in tropical culture or commerce—who will attempt even to palliate the great share which England, as a nation, has had in the prosecution of the slave-trade, for the supply both of her own colonies and of those of Spain and Portugal. And the national guilt is probably none the less, that the great mass of the people were wholly ignorant of, and untainted by, the vices of the system. They were culpably indifferent, because of this ignorance, but it was at a time when knowledge was difficult to spread, and when the arrow must pass through many obstacles which should reach their hearts.

Yet there are a few considerations which, candidly weighed, will, I think, go far to remove, not the guilt of our conduct, but the present sting and reproach which our Transatlantic brethren are anxious to find in it.

It may be said with truth of all the moral and social evils, almost without exception, which now disturb the United States, that they were introduced into the northern part of their Continent by the arrival of the Anglo-Saxon race, and that for all, therefore, we are answerable. But how far back are we to go, if nation is to shuffle off upon nation the evil habits and vices they have severally inherited?

Then if slavery was introduced by England, or maintained in the colonies in spite of the remonstrances of some of them—as of that of Massachusetts, made at an early period—and was left as a legacy, or rather wrested from her as a prize, at the Revolution, it ought to be borne in mind, that there was at the very time of the American Revolution a larger body of men in Great Britain petitioning against, and in active opposition to slavery, than the entire white non-slave-holding popula-

tion then contained in the original free States. It was in 1772 that Lord Mansfield's celebrated decision was delivered, after the energetic action of Granville Sharp, while the first serious steps, in regard to the tea-duty, were not taken in Boston till December 1773.

The prevailing opinion of the civilised world, at the time, was in favour of slavery. Men's minds were unenlightened, and day had just begun fairly to break upon the subject in England, when the American Revolution broke out. The colonies of England, therefore, as a whole, partook of, and, in fact, reflected the general opinions of England at the time, not only upon slavery, but upon most other subjects of a moral and social kind. If Liverpool and Bristol flourished by the slave-trade, so did the southern provinces of America. If Massachusetts memorialised the home Government on the subject of slavery, the inland towns of England felt as deeply, and expressed themselves as warmly, on the same subject. And the parallel runs still closer and longer together; for as, at the close of the American War, the slave-holding States, in the framing of the Federal Constitution, were strong enough to retain the institution of slavery, in the face of the broadest declaration of the rights of man ever published in a great historical document;—so the influence of those interested in slavery was able long to overpower the influence of the people in the British Houses of Parliament, and to maintain and uphold both the institution and the traffic.

But here the parallel ends, and the picture gradually lightens up on the British side of the Atlantic. With us, the emancipation feeling and influence have been constantly growing. After long struggles, the slave-trade was abolished in 1807. Further expressions of public opinion led to treaties with foreign countries (with Spain in 1817, with Brazil in 1826) for the general abolition of the traffic, and the payment even of large sums of money

to some of these countries, (to Spain £400,000,) with the view of securing this end. Continued agitation finally secured the purchase of freedom to the West India slaves, (in 1833,) at an expense of twenty millions sterling; and subsequently the abolition, among the millions of India, of forms of slavery which were already ancient in the days of Alexander the Great.

The progress of knowledge among the people of Great Britain has been gradually tending to the repression of slavery, and to the making of such amends as a nation can, for a long course of evil inflicted by a part of the community on the coloured race. One wrong and inconsistent step we certainly took, in allowing the newer free-trade policy to interfere with our older slavery-repression measures, so as to admit slave sugar (in 1846) to compete with that produced by free labour. But we may still retrieve this step, and bring back hope again to our West India colonies, by insisting upon the speedy and literal fulfilment of our slave-treaties with Spain and the Brazils.

But what has been the fate of the slavery question in the United States since the Revolution? The general sentiment on the subject, at the commencement of the struggle in 1773, was at least as advanced in the colonies as at home. But under republican institutions it grew no faster than with us, since it was not till 1807 that the foreign slave-trade was forbidden, while the internal trade still continued. And though, since the year 1772, any man not accused of crime could claim his freedom the moment he touched the British shore, and though the same liberty-giving power of mere territorial surface has been gradually spreading—till from the snowy Himalaya to the treeless Zetland, not a slave can exist beneath the shadow of the British flag—still there does not yet exist a spot beneath the wide dominion of the "stars and stripes," where the hunted slave can rest his wearied

limbs, conscious of safety—still the marshal of the great Republican Government follows his footsteps, till the British waters of the St Croix, the St John, or the St Lawrence throw him off the scent.

Nay, it is with sorrow that an Anglo-Saxon writes that the tendency of a large portion of the great Republican Union is in an opposite direction. There are already entire States upon which, if a free-coloured man set his foot, he is forthwith consigned to prison and forfeits his freedom—certainly for a time, it may be for ever!

Then the slaves themselves have been encouraged to increase from 698,000, their number in 1790, to 3,000,000 in 1850. The institution of slavery has been introduced and legalised over an area many times as great as that of the so-called slave States, at the period of the Revolution. In reference to this large tract England cannot surely be open to blame. It has also been re-established over the vast territory of Texas, out of which three slave States are to be formed. And I would put it to any candid moralist, whether the introduction of slavery into North America by English planters, and in the dim moral lights of the 17th and 18th centuries, can be compared as a national crime with that of re-imposing it, with the lights of the middle of the 19th, over a vast territory of nearly 400,000 square miles, from which, by a less energetic and less educated people, it had previously been expelled! With the tendencies which have led to these results, the probability is, that had the American Revolution not taken place—fortunately for the interests of humanity—the influence of the slave-holders, in the still united empire, would at this moment have been so great in our United Parliament, that the friends of emancipation would have been still struggling among us, as they are in the States, and slave-markets and slave-labour would still have pre-

vailed in all our colonies. Thus great moral good to mankind has really issued out of what many regarded as great political evil to the British islands.

There is, therefore, I think, much to be said in reply to, or in extenuation of, the alleged great wickedness and responsibility of England in regard to American slavery, which the impartial citizen of the United States will not refuse to consider and weigh. But suppose we grant the full weight of the charge in the grossest form in which it is brought against us. If all the guilt lies on us, then surely the burden lies upon us also to do all we can to extirpate the spreading gangrene we occasioned. Example, argument, remonstrance, reproach, ridicule—every means which we think likely in different circumstances, or with different individuals, to operate towards this end—we are not only justified in employing, but are bound to make use of. Thus the gravity of the charge as a moral accusation, instead of repressing their exertions, would urge upon the people of Great Britain—and especially upon those who have all along interested themselves as to the condition of the slave population in the United States—a far more energetic and sustained moral interference in the matter than to my knowledge has ever hitherto been attempted either by individuals or by anti-slavery associations.

But the truth is, we feel that the accusation made against us is not just, and that no such call for meddling interference really exists. There are, unquestionably, great difficulties in the way of the settlement of the slave question in the United States. We must acknowledge this, if we truly comprehend the character of the country, of the people, and of their institutions. We can afford to bear the burden of any little venom the free north may wish to ease their minds of upon our shoulders, and should only encourage them to proceed in their good work in their own way; while towards the southern

slave-holders, we ought to exercise Christian forbearance, too, for they have a very difficult part to play. They are sore pressed with the difficulties of their position, and he would be wiser almost than man who could at present show them a reasonable and safe mode of escape from them. How fortunate for us that the vast territory they occupy forms now no part of the British dominions!

I have mentioned how much, according to the personal experience of Dr Beekman, the agriculture of the banks of the Hudson has improved since the final abolition of slavery in the State of New York. Other agencies are now at work to carry it still farther in advance. The agricultural practice of North America generally has been, and is still, of an exhausting kind. On this point I have already dilated in a previous chapter. Every year, however, takes into this State, and plants upon its more capable land, some of what, for distinction's sake, we may call the second best class of Scottish and English farmers. These men where they settle find much still undone, which they know well how to do. Every year, also, is pouring upon the land some of the wealth accumulated by commercial pursuits in this great trading community. The same propensity to own and cultivate a bit of land when he has retired from business actuates the merchant in New York as in England, and, as with us, the energy and regular habits of his former life are brought by him to the farm he comes to till. From these and other causes, zealous improvers have sprung up in different parts of the State; fathers have begun to ask where their sons could learn better methods than their own; and, in Seneca and other counties, there are already, as in our better Scottish and English counties, some of the more skilful farmers who receive pupils into their families for practical instruction in the art of culture.

We have seen how large a proportion of the House

of Representatives consists of farmers. It is not surprising, therefore, that a State Agricultural Society should have been established, to which the legislature votes a large annual thousand grant to be expended in the local and general encouragement of agriculture, by means of premiums, public competitions, shows, and other methods usually adopted by such societies. Through this central society grants of money for similar purposes are conveyed to county and local societies; and, while these report their proceedings to the central society at Albany, the latter presents to the State Legislature a yearly report of all that has been done with the money of the public, and of their entire transactions for the past twelve months. This report to the Legislature forms a thick octavo volume, which is printed at the expense of the State, and distributed gratuitously. Of the volume for 1844, 11,000 copies were so distributed throughout the State; from 1845 to 1849, 6,000 copies yearly; and in 1850, as many as 16,000 copies. The volumes are very valuable, full of excellent matter, very creditable to the society and to the State; and the wide circulation given to them has been the means not only of largely diffusing much knowledge among this reading community, but of creating a taste for that more systematic, extended, and scientific instruction in matters relating to agriculture, which has lately begun to manifest itself.

The existence of this desire was one of the reasons which led to the course of lectures I had the pleasure of delivering in Albany; but it has been chiefly manifested in a proposition for the establishment of an agricultural college at the expense of the State, which has for two years past been under the consideration of the Legislature. The scheme has met with very general support, has been favourably reported on by successive committees, and will probably be agreed to during the session of 1851.

It appears at first sight singular, that among the farmers of the Assembly the strongest opponents of the measure should have sprung up. As in other countries,—so even here where the schools and periodicals are so numerous, and where, therefore, so many more chinks are open, through which daylight may break in upon the minds of the rural population—the farmers are averse to change, and more averse still to the opinion that they are not already wise enough for all they have to do. To provide more instruction for my son, in regard to the business I myself follow, is to acknowledge my own want of information, and this is a degree of humility which the mass of the people cannot induce themselves to exhibit. Thus, while the lawyers, and nearly all the other classes of men in the Legislature, are willing to vote the public money with a view to the future improvement of the staple interest of the State, many of the farmers themselves refuse to accept the grant as a gift to their class, on the ground that the knowledge to be given in the school is not required, and that its application to the soil would be of doubtful benefit.

In a country where it is part of the democratic faith, that every man is fitted to fill any public office without special instruction, and where, as a practical consequence, the quack doctor and the educated physician receive equal encouragement in their professional pursuits, we might ascribe to this general sentiment of the people, the opposition of the rural classes to the special education of their sons in the branches of knowledge which throw light upon the art by which they are to live. But the opposition of a similar kind which has been, in so many ways and on so many occasions, exhibited among ourselves, is a proof that there is something in the habit of mind which is common to the cultivators of both sides of the Atlantic, which makes them difficult to convince that

anything they have been accustomed to do, has been done in a wrong way, or that, by any other way you can describe, the same thing could be done cheaper, sooner, better, or with more profitable results.

Another objection made to this bill I mention, because it is one which I think would not have been made in this country. I have already alluded to the rotation of office which has become almost a rule of the State, on the principle that the right of all being equal, an equal division should be made of all the State can bestow. Now as the erection of one large college would cause a great expenditure, in the locality where it was fixed, would in various ways benefit the neighbourhood, and would especially improve the quality and raise the market-value of the land, I was assured that there were scarcely any of the country members who would have refused to vote for the bill, if they had been assured beforehand that the college was to be planted within their own electoral district, while many others, if the place were fixed, would, for the same reason, be as sure to vote against it. A scheme at once larger and smaller was therefore advocated by some;—that, instead of one large and efficient college, ten or twelve small colleges, or academies, should be planted in different counties of the State, that thus the anticipated benefits of all kinds might be more equally divided, and a larger number of supporters conciliated to the general measure for improving the agriculture of their common country. In favour of a system of schools so dispersed, in subordination to a well-organised central college, very much may be said, and it will be very creditable to the State should it hereafter be enabled to establish them; but the central school must first be in active operation, that men may be trained up who shall be qualified to preside over and prudently direct them.

But, numerous as are the small and often selfish cur-

rents which oppose and cross each other on the surface of men's minds in this country, there is underneath in all a steady stream of patriotic feeling, which guides them in the main to what is likely at once to benefit and to prove creditable to their native State. This great good arises to the Union out of the numerous state legislatures—that a constant rivalry is excited and exists among them, which makes them strive to outdo each other, or at least not to be left altogether behind in material or social progress.

Among the consequences of this rivalry, two important labours are now in progress, creditable alike to the Legislature at Albany, and to the entire State, which it would be inexcusable in me to pass unnoticed. The first of these is the great work on *The Natural History of the State of New York*, of which 16 quarto volumes are already published, and four others are in course of preparation.

Geological and mineralogical surveys, more or less minute, have from time to time been executed in the several States. The natural history survey of the State of New York was commenced in 1836. It took from the first a wider range and more expensive form than those of many other States; but the plan has been enlarged and extended from time to time as the field of inquiry opened, and the demands of science and of the country itself became better understood. The original plan contemplated the publication of three octavo volumes, and an atlas of plates, a period of four years to complete them, and an expenditure of 104,000 dollars. The quarto form was afterwards adopted, of which size sixteen volumes have already been published. Fourteen years have elapsed since the work commenced, 425,000 dollars have already been expended upon it, and four volumes more, with an additional expenditure of 150,000 dollars, are still expected.

Of the volumes published, two are on the Botany of the State, by Dr Torry of New York; five on its Zoology, by Dr De Kay; four on its Geology, by Mather, Vanuxem, Hall, and Emmons, one volume by each; one on the Mineralogy, by Dr Beck; one on the Palæontology, by Mr Hall; and three on the Agriculture, by Dr Emmons. There are in these volumes some things which might have been done more methodically, had the work to be begun now with the knowledge acquired during the progress of the survey, and with the prospect of the large sum to complete it which has from time to time been voted for the purpose; but it is, on the whole, very creditable to the science of the State of New York, contains large additions to our previous knowledge, especially in its geological and palæontological department; and is an honourable testimony to the willingness of the common-sense legislators of the State, to expend large sums of money even for objects which do not at first sight promise an equivalent return of material profit. The fame which such works bring to a country goes for some thing even with them.

An examination of the several volumes of this work has reminded me of an observation, which numerous other circumstances from time to time forced upon my attention during my stay in the United States. A feverish anxiety manifests itself every now and then, even among scientific men of undoubted talent, to give their science a national instead of a catholic character. The naturalists are uneasy under the fetters of European authority, and call out for a nomenclature native to themselves. The geologists disdain to name their formations by designations taken from European localities, and wish to make it a point of patriotism to contrive and adopt a classification and nomenclature purely American. The mineralogist insists upon the necessity of an analysis of all minerals found in America, simply because they

are American—though there are abundance of still unanalysed substances upon which those qualified to analyse may, for many years to come, be far more profitably employed for the benefit of mineralogical science. And the same spirit occasionally appears in these volumes of the New York Natural History. The author of the volumes on Scientific Agriculture, for example, has pled for the analysis, organic and inorganic, of every species of cultivated grain, root, and fruit, simply because it is of New York State growth; and thus, on the analysis of those vegetables which are best known, to which most had been done in Europe already, a vast amount of labour has been expended, for the devotion of which to other less known productions science would have been abundantly grateful.

Not that this comparatively useless labour would have been unworthily expended had the analyses, made and published, been performed more carefully or by better methods than those which we previously possessed. We may safely look upon all our past analyses as little more than tentative, and reckon upon their being gradually superseded by others of greater trustworthiness, because performed by the aid of lights which past analysts did not possess. But these numerous New York analyses do not possess that character; and a careful criticism of methods and results shows that, where they differ from our best European analyses, they are not to be preferred, as their evidence does not strengthen them where they agree. In fact, the vast number of analyses which these volumes contain, compared with the short time in which the entire volumes were prepared, alone indicate haste and throw suspicion upon the trustworthy nature of the results.

I have rarely met with a person who appeared to me to possess a wider range of knowledge of the various branches of natural science, which may usefully

be brought to bear upon practical agriculture by a man of a practical turn of mind and some familiarity with rural affairs, than Dr Emmons, to whom one branch of the geological and the whole of the agricultural department of the survey has been entrusted. But the ambition to overtake too many branches, to cover too much ground by his own exertions, and to do too much work in far too little time—has led him, I fear, to sacrifice accuracy to extent, and to waste, in re-doing what others had better done before, a precious energy and life which might have dug out much treasure to the permanent enriching of science, and the bestowal of new honour upon himself and his country.

The eager impatience to play the first *rôle* in science, as in politics, is not to be gratified by the execution of a vast amount of work, but by doing what is performed accurately and well. Nor will it be attained by shutting up American science in a series of swaddlings—under the name of classifications and nomenclatures—merely national. This may retard the progress of general science, but it cannot give America rule in the scientific world. The direction of a given branch of natural science will always remain with those, in whatever country they may happen to live, who, at a given time, are generally believed by its living cultivators to have done most to promote its advancement. And whenever our Transatlantic cousins shall have leisure so to devote the energies of any one of their countrymen, as to enable him to take the lead of all others in widening some one branch of natural knowledge or fixing its principles, then all Europe will readily bow to his authority, and most willingly adopt the amendments he may recommend in nomenclature and classification, and even hail them as most efficient helps towards the further progress of pure science.

The other important labour I have referred to is an

entire revision of the code of law and of procedure in the courts of justice of the State. In the amended Constitution of the State of New York, adopted by the electors on the 3d of November 1846, it was provided, (art i. § 17,) that "the Legislature, at its first session after the adoption of this Constitution, shall appoint three commissioners, whose duty it shall be to reduce into a written and systematic code the whole body of the law of this State, or so much and such parts thereof as to the said commissioners shall seem practicable and expedient." And again, in art. vi. § 24, "The Legislature, at its first session after the adoption of this Constitution, shall provide for the appointment of three commissioners, whose duty it shall be to revise, reform, simplify, and abridge the rules and practice, pleadings, forms, and proceedings of the courts of record of this State."

In consequence of these provisions of the Constitution, the two sets of commissioners were appointed, and began their labours in 1847. The commissioners on practice and pleadings speedily matured a "code of procedure" in civil cases, containing many alterations, simplifications, and amendments on the ancient practice of the courts. In particular, it did away with the distinction between Courts of Law and Courts of Equity, combining the two jurisdictions, as is the case in the Scotch Court of Session. Much learning and ability were displayed by the Commissioners in this code, and in the notes by which the alterations it recommended were explained and defended. It was adopted at once by both Houses of Legislature, went immediately into operation, and the Commissioners turned their attention with equal energy to the preparation of a code of criminal procedure, in which I believe they are still engaged.

In a work like this, intricate at once and comprehensive, errors and oversights could not fail to be made,

which have awakened severe criticisms, and must occasion both litigation and loss to many suitors in the State. But a main evil complained of is, that in drawing up this code in reference to "remedies," the commissioners have in many cases materially altered the question of "rights,"—have thus summarily, therefore, and without warrant, changed the law itself, and have infringed upon the duties of the other set of commissioners, to whom was intrusted the preparation of a "code of the laws of the State."

It would be out of place here to discuss these objections and differences of opinion. Every one can understand how "remedies and rights" cannot fail on many occasions to run into each other, and that a code of the former, which should be consistent with modern knowledge, and with the circumstances of a country like New York—in which the trammels of old forms and constitutions do not so tie the hands of improvers as they do among us—could not satisfactorily, and upon broad principles, be prepared without interfering with the latter. But the point it is of importance for a foreigner to appreciate is the greatness and manifest utility of the undertaking itself. For, though difficulties may lie in the way of the execution, the design is worthy of a clear-headed advancing people, and the final result must be accompanied by much practical advantage to the State. There is an air of resolute dignity in the determination of a convocation of the people at once to codify and make simple the whole law and legal practice of the State; and, in a country where such a wholesale resolution could at once be come to, the obstacles to change for the better must be very much fewer and less powerful than in most European countries.

The tendency to litigation is said to exist in the United States more strongly than in other countries, and perhaps the extreme democratic notion of equal

rights disposes men to stubbornness in maintaining their own opinions, even at the expense of actions at law. To make law expensive is said to have the effect in Europe of repressing such a spirit of litigation, and it is argued that the cheapening and simplifying of the forms of process will encourage a disposition already too manifest in North America. But if such an argument be good in favour of a denial of justice, it ought to be so also in favour of a denial of all those liberties which are secured by a constitutional government. It is the argument of Austria against Hungary, that to concede rights leads to excesses, though the experience of other countries shows that well-tempered rights can be so secured as to repress the tendency to extremes which exists alike in the minds of the ruler and the ruled.

Among the laws of this State which arrest the attention of a European as directly affecting the domestic and social relations, are these two—

First,—"That a married woman may take by inheritance, or by gift, devise, or bequest, from any person, *other than her* husband, hold to her own separate use, and convey the same, whether real or personal property, in the same manner, and with like effect, as if she was unmarried; and the same is not subject to the disposal of her husband, nor liable for his debts." And,

Second,—When a householder having a family becomes bankrupt, a homestead, not exceeding 1000 dollars in value, is exempted from execution; and this exemption continues after the death of the husband, until the youngest child becomes twenty-one years of age, and till the death of the widow. It is not exempted, however, from taxes, or from the payment of the purchase-money, and it must be recorded in the clerk's office, when purchased, as designed for the homestead property.

Similar laws have been passed in several of the other

States. Whatever we may think of their abstract justice, it is easy to recognise in them that greater influence of the female sex which, among the visible peculiarities of their social state, is one of the first which is perceived by an Anglo-Saxon from Europe.

This greater influence will not be without good fruits to the happiness of the humbler classes of American society, if it prevent the establishment among them of that very melancholy state of things which prevails among the working-classes in this country as to the state of their earnings. "It has been computed that, among those whose earnings are from 10s. to 15s. weekly, at least one-half is spent by the man upon objects * in which the other members of the family have no share. Among artisans earning from 20s. to 30s. weekly, it is said that at least one-third of the amount is in many cases thus selfishly devoted." American society might consent to submit to many evils arising out of excessive female influence, if it can save itself from the spread among its skilled labourers of such unchristian and selfish and ruinous habits as these.

While on the subject of the laws of the State, I may advert to a mode of canvassing for office, on the part of eminent lawyers, to which custom would no doubt, after a time, reconcile even an English barrister or a Scottish advocate, but which, with our prevailing opinions and sensitiveness, would scarcely be descended to by men of high standing at present.

I have, in a former chapter, spoken of the popular election of judges of all grades in this State—a custom introduced by the amended constitution of 1846. The Attorney-general is in like manner elected by popular suffrage at a general election, and holds office for two years.

Most of the reading public of this country who interest

* What Mr Potter, from whom I make this extract, very properly calls "*self-imposed taxation.*"

themselves in American affairs, are aware of the existence of a body of men in the State of New York who have been distinguished as "anti-renters"—persons who hold portions of ancient grants or manors, on condition of paying certain reserved rents and manorial claims to the original grantee, or lord of the manor, from whom they hold. During late years the payment of these rents and charges began first to be complained of, then to be resisted, then absolutely refused, and finally their legality to be disputed. The question has caused much excitement and considerable disturbance in the State. It has been agitated in the Legislature, and in the courts of law, and the supposed opinions in regard to it of candidates for legal appointments is said to have formed an element which weighed with many in determining which candidate they would support.

During the last canvass for the office of Attorney-general, I met with the following advertisement in the public journals of the State:—

"I have repeatedly been applied to by individuals to know my opinions with regard to the manorial titles, and what course I intended to pursue, if elected, in relation to suits commenced and to be commenced under the joint resolution of the Senate and Assembly. I have uniformly replied to these inquiries, that I regard the manor titles as a public curse, which ought not to exist in a free government, and that, if they can be broken up and invalidated by law, it will give me great pleasure; and I shall prosecute the pending suits with as much vigour and industry as I possess, and will commence others, if, on examination, I shall be satisfied there is the least possible chance of success. I regard these prosecutions as a matter of public duty, and, in this instance, duty squares with my inclinations and wishes.

"L. S. CHATFIELD."

"*November* 2, 1849."

Mr Chatfield is now Attorney-general; and I was informed that the known opinions of certain of the old judges, on this exciting question, was one of the understood reasons why they were not re-elected by popular suffrage when, according to the New Constitution, their term of office had expired. Where nearly all persons are party-men, and the tenure of all office is short, the will of the majority must soon make itself felt, even by the interpreters and administrators of the law.

As my leisure did not admit of my paying a visit to the large and celebrated penitentiary at Sing-Sing, which is far down the Hudson, and within thirty-three miles of New York, I willingly accepted an invitation to visit the penitentiary of this city. It was on the occasion of a public visit of the authorities, and therefore every part of the building was thrown open, though fewer opportunities were thereby presented for the special inquiries of a foreigner. The Auburn system, as it is called, is adopted here as in all the penitentiaries of New England, New York, Canada, and most of the north-western States. Solitary confinement at night and on Sundays, solitary meals every day, and constant but absolutely silent labour in company in large well-ventilated workshops, and under strict superintendence, form the essence of this system. It is distinguished from that of Pennsylvania by the additional rigour of solitary labour, which is adopted in the latter.

Everything was in excellent order, and comfortably warm, and both males and females, in their several wards, were equally diligent, silent, apparently in good health, and under perfect control. There were about one hundred prisoners in this house, confined chiefly for petty larcenies, and they were for the most part employed upon matting and wicker-work. The size and construction of the cells, and of their meagre furniture, their arrangement in successive stories in a square tower, shut in by

blind walls at the distance of about twelve feet, and the separate disposal of the prisoners, was much the same as has been so often described by visitors to Sing-Sing and the other North American penitentiaries. In an economical point of view, the system is a cheaper one in America than in Europe, owing to the high price of labour, the ready sale obtained for articles of manufacture, and the large proportion of the whole expense of the prison, which is defrayed by the labour of the prisoners themselves in the former country.

Albany, Jan. 15, 1850.—I this day paid a visit to the city of Troy, which is now a rival to Albany, and is situated about seven miles higher up the river. It stands on the left bank of the Hudson, on a long flat of intervale land, nearly opposite the mouth of the Mohawk River. It contains about twenty-five thousand inhabitants, has wide streets, massive churches and other public buildings, and well-built houses. The Hudson is navigable for large steamers as high as Troy, and West Troy is at the mouth of the Erie and Champlain Canals, so that passengers and goods for Canada, Vermont, western New York, or the western States, proceed more directly through this city than if they stop and re-ship at Albany. Troy, therefore, is very flourishing, has mills and manufactories of various kinds, is already, like Albany, climbing up the steep banks which hem in the low intervale, and will necessarily increase with the prosperity and commerce of those counties which communicate with the Atlantic through Lake Champlain, the Mohawk, and the Hudson. If any large portion of the traffic of the great lakes should find its way, as I have elsewhere shown to be probable, through the St Lawrence and the canals which connect this river with Lake Champlain, Troy will benefit by it more directly than any other city in the State. The transport through Troy, and the transit dues levied there, already exceed those which are collected at

the older city of Albany; and Leeds does not feel sorer against Bradford for intermeddling with its trade, than the Albanians do against the Trojans for intercepting their foreign traffic.

The railways from New York and Boston are continued from Albany to Troy, and measures are in progress for extending the line through Vermont and into Canada. The completion of such a line would interfere with the plans both of Boston and Portland, and secure to New York a portion of the European traffic which each of these ports has sanguine hopes of being able to divert exclusively to itself.

There are many in the free States who covet a closer connection with the shores of the St Lawrence than that which canals and railroads would produce. In whatever form, or by whichever class, the Annexation movement is brought forward in Canada, it will find ready sympathisers in the Empire State. I heard, as it may be supposed, many opinions and discussions upon the matter, to which I shall not here advert. The following resolutions, brought before the House of Representatives during the present session (1849-50) by Mr Wheeler, member for Franklin County, (a county bordering on Canada,) and ordered to lie on the table, are here, however, not quite out of place:—

"Mr Wheeler, of Franklin County, offered the following resolutions, which lie on the table:—

"*Whereas*, by the original articles of the Confederation adopted by the States of this Union, it was provided that Canada, acceding to this Confederation, and joining the measures of the United States, shall be admitted into and entitled to all the advantages of this Union.

"And *whereas*, recent occurrences in the Provinces of Canada indicate a strong and growing desire on the part of the people thereof to avail themselves of the advantages of the foregoing offer, and to apply for

admission among the Sovereign States of this Union; Therefore,

"*Resolved*, (if the Senate concur,) That, believing the admission of Canada into the Union to be a measure intimately connected with the permanent prosperity and glory of both countries, the people of the State of New York are earnestly desirous to see such Union effected, without a violation on the part of the United States of the amicable relations existing with the British Government, or with the law of nations.

"*Resolved*, (if the Senate concur,) That the annexation of Canada, and the other Provinces of Great Britain in North America, effected by negotiation with the British Government, and with the voluntary consent of the people of said Provinces, upon equitable and honourable terms, is an object of incalculable importance to the people of the United States. It would reunite into one family, and make citizens of a brave, industrious, and intelligent people, who are now our brethren in interest and language. It would save this country the expense of maintaining a line of custom-houses and fortifications 3,500 miles in extent, and give to the whole continent the blessing of free and unmolested trade. It would secure the preponderance of free institutions in this Union, and it would unite under one republican government, all the people and all the territory between the Atlantic and the Pacific, and the Gulf of Mexico and the Arctic Ocean.

"*Resolved*, (if the Senate concur,) That our Senators and Representatives in Congress be requested to cooperate in any measure which the general administration may adopt, to promote the peaceful annexation of the British North American Provinces to this country."

Considering the origin of the cities of Albany and New York, from the original Dutch settlers on the Hudson, one is not surprised to find words in common use

even in polite society in Albany, the meaning of which, an Englishman, who has never been in Holland, or been accustomed to dip into a Dutch dictionary, is unable to understand. *Cookie*, in the ears of a Scotchman, is as familiar as in those of an Albanian, as the name of a little light tea-cake. *Cruller*, (Dutch, kruller,) a twisted stripe of sweet paste of various forms, fried in lard, is unknown among us, so far as I am aware. *Dough nuts* are round pieces of similar paste, about the size of walnuts, similarly fried. *Oly-koek* (oil-cake) is a dough-nut with raisins in it, made at Yule, or New-Year's Day. All these forms of sweet paste, baked in the oven, are common among us; the peculiarity of the cruller and dough-nut being that, like fried fish, they are cooked by immersion in boiling lard. *Chowder*, a favourite dish in New England—a stew of fish, pork, onions, and biscuit, often prepared by pic-nic parties, who visit the sea-shore, from fish caught at the time—is not unknown at our tables, though not usually prepared after the approved New England fashion.

Such words as these are real additions to the riches of the English language, as they are names of things not previously known to the English tongue. So are the words *Succatash*, for unripe Indian corn and beans, boiled together whole; *Hominy*, for coarsely ground or broken Indian corn, boiled with water. *Suppaun* (New York) and *Samp*, (New England) both of Indian origin, and *Mush*, (Pennsylvania) of English derivation, are synonymous for hasty-pudding or porridge, made of fine Indian-corn meal, and two of them could be dispensed with. Since the introduction of Indian meal amongst us, the word hominy has been introduced as the proper name of porridge made from Indian meal; but when the Indians bruised their corn, they sifted out the fine flour, which they called *samp*, the coarse remainder they called *hominy*.

File with us has a slang meaning, very different from its household sense in Albany; there it is the usual name for a *mop*. A lady will also lament that she has got a *winkelhawk* in her gown; this means an angular tear, like the letter L, and is pure Dutch.

Among parliamentary words, Sam Slick has made *Bunkum*, or "talking to Bunkum"—making speeches at Washington, or in the State Legislature, which are intended not for the House, but for the speaker's constituents—sufficiently familiar to English readers. *Log-rolling*, is another equally significant and useful word in parliamentary diction, derived, as I have already explained, from a practice of the lumberers. When the trees are felled and trimmed, "rolling the logs" to the rivers or brooks down which they are to be floated, as soon as the spring freshets set in, remains to be done. This being the hardest work of all, the men of several camps will unite, giving their conjoined strength to the first party on Monday, to the second on Tuesday, and so on. A like system in parliamentary matters is called log-rolling. You and your friends help me in my railroad bill, and I and my friends help you with your bank charter; or sometimes the Whigs and the Democrats, when nearly balanced, will get up a party log-rolling, agreeing that the one shall be allowed to carry through a certain measure without much opposition, provided a similar concession is granted to the other. The former variety of log-rolling is said to be very frequent in the State Legislatures. It is probably not rare either in Washington or Westminster.

I notice two peculiarities in the use of English words I have heard on the Hudson, which probably owe their origin to the connecting of German or Dutch ideas with the English sound. In New York they talk of *riding* in a steamboat; we say sail, which is as improper, says the New Yorker, because our river steamers have no sails.

In some parts of our own island the people talk of *sailing in a cart*, and the German sees nothing wrong in speaking of his having experienced a severe sea-sickness, (See-krankheit,) as he came in the Diligence from Dresden to Berlin. The German *reiten* is usually applied to progression on the back of animal. But the Dutch use their *rijden* not merely as we do to *riding* in a carriage, but to *riding on skates*, and in other ways; so that to the Dutch on the Hudson is probably due the riding in steamboats.

With us the judge tries, and the lawyer conducts, pleads, or defends a cause. I met here, however, with lawyers who talked of having been so far off trying a cause, or of having tried so many causes, when they had only appeared in each as counsel in behalf of one of the parties to the suit.

CHAPTER XXIV.

New York to Philadelphia.—Red lands of New Jersey.—Peach orchards.—Short life of the peach-tree in this State.—Modes of culture of the peach orchards on different soils.—Enemies of the peach-tree.—Peach-borer.—The yellows, its cause and cure unknown.—Former healthiness of this tree.—Appearance of disease in 1800.—The result of exhausting cultivation.—Philadelphia, its attractions and hospitality.—Girard College.—The penitentiary and Philadelphia system.—Fairmount Water-works.—Relative proportions of the different religious sects.—Professor Hare.—Salt-water terrapin, a luxury at Philadelphia.—Fertilising property of the green sand.—Supposed cause of its fertilising action.—Probable presence of phosphate of lime.—Discovery of this phosphate in large quantity.—Formation of the green grains of the green sand.—Production of blue crystals of phosphate of iron.—Geological survey of Pennsylvania.—Delay of the State Legislature in publishing the results.—German population of Pennsylvania.—Their supposed un-progressing character.—Tested by the state of the common school teaching, compared with that of New York State.—Comparative prospects of the next generation in these States.—Wages and price of land.—State of agriculture in Pennsylvania.—Coloured people, their condition in Philadelphia.—Preference of white labourers from fear or choice.—Their expulsion from the Atlantic border—Their increase in the North-Western States.—Natural migration beyond human control.—Mr Lea's collection of shells.—Journey to Baltimore.—Soil on the Susquehannah.—City of Baltimore, its position.—Condition and houses of the mechanics.—Diminution of the slave population in Maryland.—Free-schools in Baltimore.—State agricultural chemist.—Analysing soils on the spot.—Sources of the prosperity of Baltimore.—Large transit-trade.—Canvass-backed duck.—Maryland hams and apple-toddy.—Mulatto lands.—Remarkable effects of gypsum on them.—Tertiary green sands.—Journey to Washington.

PHILADELPHIA, *Jan.* 26.—Yesterday morning I left Albany for New York by railway, stayed there overnight,

and came on to Philadelphia this forenoon. The distance by railroad from New York to Philadelphia is about ninety miles, and four hours is the usual time occupied in the journey.

After crossing the North River from New York to Jersey city, a flat of two miles in width extends from the river to a ridge of igneous rocks, through which the railroad is carried by a deep cutting. At Newark, (thirteen miles,) the prevailing geological and agricultural character of the State of New Jersey becomes apparent. *New* red sandstones, soft and crumbling, form light red sandy and marly soils, easy to till, and bearing much Indian corn, and a gently undulating but generally flat country, from which the water in many localities escapes too slowly. The snow, which two months before I had encountered in New Brunswick, and which covered the ground deeply when I left Albany yesterday morning, had gradually lessened as I approached the Atlantic, and on the shores of Long Island Sound had entirely disappeared. I was enabled, therefore, to see the naked surface of the country as if winter had not yet come on.

As we approached the Schuylkill at Trenton, the soils became less red, and thence along this river by Bristol to Philadelphia, grey gravels prevailed, and light grey sandy soils, very poor in many places, and covered with frequent unpromising orchards. The red land north of the Schuylkill is naturally a broad-leaved or hardwood region; but on these grey sands the gloomy pines usurp almost the entire surface.

New Jersey, Delaware, and Maryland are famed for their orchards, and New Jersey especially for its immense produce of peaches. Orchards of ten to twenty thousand peach-trees are not uncommon in this State. Each tree yields, when in bearing, an average produce of a bushel of perfect fruit. This is sent in vast quantities

to the markets of New York and Philadelphia, where the price varies from fifty cents (2s. 2d.) to four dollars (17s. 6d.) a bushel—the average retail price being about 6s. 6d. a bushel.

The remarkable facility with which the peach-tree grows on the soils of this State has led to the great extent to which the culture of the tree is carried. On the greater part of its surface, however, the tree is very short-lived, continues in profitable bearing only about three years, and rarely yields more than two or three good crops. The large peach-grower has always, therefore, a succession of young trees coming forward. They bear the third year; and if they produce two good crops afterwards, they repay the investment. The ground thus occupied is poor, thin, light, and sandy, of little value for the growth of corn crops, and is therefore profitably covered with these quickly-dying orchards.

Yet better, richer, and deeper soils in these States are also covered with peach orchards, and in these the trees take deeper root, grow up healthily and in luxuriance, and, with proper care, yield crops of marketable fruit for twenty successive years. The mode of culture on the two qualities of soils is very different. On the light soils, Indian corn or rye, or some other suitable crop, is sown between the rows of trees—which are planted sixteen to twenty-five feet apart—during the first season only after the trees are planted. The surface is then left at rest, is enriched by top-dressings, and is undisturbed by the plough. This treatment is the most proper, under the circumstances. The soil is poor and thin; the roots run along the surface in search of food; the plough, if put in, would injure them, and would retard the growth of the tree.

On the richer, deeper, and stronger soils, the interspaces are ploughed and cropped year after year. The

roots of the trees descend beyond the reach of the ploughshare; the land is kept open, mellow, and clean, by the culture; and the tree flourishes for a series of years, and is more luxuriant than when the sod is unbroken.

The chief enemies of the peach-tree in these States are, an insect called the peach-borer, and a constitutional disease called the yellows. The borer, *Ægeria exitiosa*, is an insect that deposits its eggs in the bark, at the base of the trunk, immediately beneath the surface of the soil. These are hatched, and produce a white grub, which bores into the bark and sap-wood, grows to the size of three quarters of an inch in length, forms a cocoon, passes the winter in the tree, and emerges in a winged form in the month of June. The remedy is to put half-a-peck of air-slaked lime round the bottom of the stem, and to allow it to remain from May till October.

The *yellows* is a disease peculiar to the peach-tree, and, it is said, to North America. For thirty years it has killed off the trees by thousands; but nothing is known of its cause. As the name implies, its character is to cause the tree to produce slender wiry shoots, with small, narrow, yellow leaves, to ripen its fruit two to four weeks earlier than usual, to yield fruit diminishing in size, and becoming purplish, spotted, and redder in the flesh every year, and to die altogether in from one to four years. It is believed to be contagious, and is certainly propagated by budding or grafting from a diseased tree, and affects the stock, whether peach, almond, plum, or apricot.

Cause and cure for this disease are alike unknown. Trees which exhibit it must be cut down, the land unorcharded, and tilled for some years, and then healthy young trees, if they can be got, planted in their stead. But certain facts in the history of this disease, which seem to throw some light upon its cause, are interesting

and instructive, not only to the fruit-growing, but to the grain-raising farmer also.

For a hundred years, the peach flourished without care, and full of health, from the mouth of the Chesapeake to the Connecticut River, and produced an apparently exhaustless abundance of fruit. But about 1800, attention was drawn around Philadelphia to the sudden decay and death of the orchards without known cause. The fatality spread through Delaware into New Jersey, where, in 1814, many of the orchards were entirely destroyed. Some years later, it appeared on the banks of the Hudson, thence spread north into Connecticut, and is now slowly but surely extending along the rich soils of western New York, towards the great centre of the peach cultivation of the States, on the Ohio and Mississippi rivers. *

In the peach-orchards, as on the new wheat-lands, a thoughtless exhausting culture was carried on. As if the soil would never tire of yielding, the unpruned trees were encouraged to yield their annual loads of most abundant fruit; and wherever it was possible, a constant cropping of the space between the trees hastened the wearing out of the overtasked land. The trees themselves, as the land became less rich, diminished in vigour, and an enfeebled progeny arose, which disease, in some form, was sure to attack.

There is a great similarity between the progress of the wheat failure, caused by the attacks of the midge, and that of the peach-orchards above described. The injury in both cases is first done to the soil; and a sure return to a better state of things can only be made by renovating the soil itself, and by a more prudent and skilful subsequent cultivation.

In the city of Philadelphia, there are many things

* Downing's *Fruits and Fruit-Trees of America*, p. 464.

which deserve the attention of a stranger. Its extent (three hundred thousand inhabitants) and regularity, the number of handsome public buildings it contains, and the excellence of its public institutions—charitable, educational, scientific, and religious—form an important part of its attractions, while the hospitality shown to the foreigner adds pleasure to his stay.

The State House, in which the Declaration of Independence was signed—the Girard College, probably the most magnificent educational building in America — the celebrated Penitentiary, and the Fairmount Water-works, are the objects which chiefly solicit the stranger's regard. The Girard College, like some of the Edinburgh hospitals, is an institution for the gratuitous support and education of destitute children. The founder left the large sum of six millions of dollars for the purpose, and the magnificent marble building has cost two millions of dollars. The penitentiary is conducted on a system which so far differs from that of Sing-Sing, and the other New York and New England penitentiaries, that the prisoners live and work in solitary confinement, are unseen by each other, and unknown, except by their numbers, even to the keepers. Thus they contract no evil acquaintances, even by sight—are not kept under constant restraint and surveillance while in the house, and, when they go out, may begin to lead a new life without the fear of being known and recognised, or led astray by acquaintances they have made in prison. These are by many considered to be advantages in the "Philadelphia system," while the Auburn system is more economical in demanding less space and compelling more labour from the prisoners. The Fairmount Water-works have this interesting engineering feature, that, by the erection of a dam across the Schuylkill, a fall of twelve feet is obtained at low water; by means of which the water of the river itself is pumped up nearly a

hundred feet into large reservoirs, from which the city is abundantly and cheaply supplied.

The hospitals, the House of Refuge, the Philosophical Society, the Academy of Sciences, the Franklin Institute —a kind of better mechanics' institute, with three thousand members — the schools, the churches, and the magnificent bay, will each convey to the stranger some special impression in regard to the city, its pursuits, and the character of its inhabitants.

The churches are numerous, and many of them ambitious in dimensions and in design. The religious tastes and tendencies are decidedly Protestant; and among Protestant sects those which follow the simplest forms of worship are the most numerous. Thus, among the churches, 24 are Presbyterian, 18 Protestant Episcopal, 8 Methodist, 8 Quaker, 5 Baptist, 5 German Lutheran, 5 Roman Catholic, 4 Synagogues, 2 each of the Dutch Reformed and Universalist persuasions, and 1 each of the Unitarian, Swedenborgian, Moravian, German Reformed, Independent, and Protesting Methodist. This relative proportion of the several sects is remarkably contrasted with that of New England, in which the Independent or Congregational interest is so strong, and with the State of Massachusetts, in which that form has so very extensively assumed the Unitarian type.

In Philadelphia, I had the pleasure of meeting an old friend in Professor Hare, long known in England almost as well as in America; and as I was fortunate enough to arrive on a Saturday, he had the goodness to introduce me in the evening to one of the very agreeable *whister* parties of this city, where I enjoyed the opportunity my leisure would not otherwise have afforded me, of meeting a large number of the celebrated literary and scientific men, in whom Philadelphia is so rich.

Among the luxuries of the season much prized by American epicures, of which I partook at this party, the salt-water terrapin, *Emys palustris*, was new to me. It is a small species of tortoise, from 5 to 7 inches in length, and 1 to 2½ in breadth, which is found exclusively in salt or brackish streams near the sea-shore. It buries itself in the mud, and at this season is very fat, and is taken in great numbers. Along the mud banks, which are accessible at low water, it is met with from the Gulf of Mexico as far north as New York; but it is especially abundant in the Chesapeake and the Delaware. Other species found in fresh water, such as the wood terrapin, *E. insculpta*, the red-bellied terrapin, *E. rubri-ventris*, and the painted tortoise, *E. picta*, are also eaten along the coast, especially the two former; but the salt-water species is the only one that is valued by connoisseurs.

My attention was drawn in Philadelphia to several subjects connected with chemical agriculture, of which the fertilising character of the green sand of New Jersey was one of the most interesting. It has been long known in England that narrow stripes of land beneath the chalk escarpments in the southern counties possessed a peculiar fertility, which distinguished them from the neighbouring soils, and gave them a superior value. The recent researches of Mr Payne and the analyses of Professor Way have rendered it exceedingly probable, that grains and nodules of phosphate of lime, which occur in layers, and are diffused through certain subordinate beds of the green sand formation, are among the chief causes of this peculiar fertility; and many circumstances familiar to the practical farmers of the districts, in which these beds are found, tend to confirm this opinion.

In passing through New Jersey, in which certain deposits of green sand are met with, it was interesting to me to learn that the farmers of the State ascribed to

it a certain fertilising value, as an application to the poor thin sandy soils—of which I have spoken, as being covered so extensively with orchards of the short-lived peach-tree. Loose beds of green sand, of an exceedingly pure kind — that is to say, consisting of green granules intermixed with grains of quartz, in which the former abound in a far greater degree than has, I believe, ever been met with in our English green sands—occur in New Jersey. From these beds the fine loose sand is dug up, and carted to considerable distances to be spread upon the land. Its efficacy is very generally acknowledged, but few accurate results of experiments have been published, from which its precise value can be estimated.

Among the persons who interest themselves with scientific agriculture at Philadelphia, I conversed upon this matter with Dr Ellwyn, the President of the Local Agricultural Society; with Professor Rogers, the successor of Dr Hare in the chemical chair of the Medical College of Philadelphia, and with Dr Emerson, who has edited some valuable agricultural works; and I found them universally of opinion, that the *potash* contained in the green grains was the cause of the fertilising action of the sand, to which it gave the green colour. In the pure green grains, this potash amounted by analysis to 8 per cent or upwards, and ascribing, after Liebig, a preponderating influence to this ingredient of plants and soils, the discovery of this potash was held by these gentlemen to be a satisfactory explanation also of the good effects of the green sand, when applied to the naturally poor arenaceous soils.

Without refusing a certain virtue to the potash, which green sand and other rocky substances may contain, the following facts satisfied me that the matter in question, so far from being cleared up, was still open to investigation. Thus it was acknowledged, *first*—that all samples of green sand, that beds from every locality, did not pro-

duce equal effects. This was explained by saying that the less valuable beds did not contain so much potash—that they were coloured by *chlorite*, and not by the true green grains; *second*, that phosphate of lime, and especially casts of fossils in phosphate of lime, similar to those which our English green sands produce, were known to occur in various places along the green sand country in New Jersey; and, *third*, that the presence of this mineral phosphate had never been suspected or sought for in the green grains themselves, or in the marly beds which occur in the green sand formation of New Jersey. I regretted that my own leisure did not admit of a personal examination of the localities—the importance of which these gentlemen readily acknowledged, when informed of what had been observed in the green sands of England.

I subsequently met, in Boston, with Professor Henry Rogers, who was familiar with the geology of this New Jersey country, and who was inclined also to rely upon the potash of the green grains as the key to the good effects of the sand, but whom the suggestion of the possible presence of phosphate of lime at once satisfied of the economical value and interest of the inquiry. He furnished me with some varieties of the green grains and sand, in which, upon analysis, I found from one to one and a-half per cent of phosphate of lime, which, because unthought of, had previously escaped the attention of American analysts. But this result was valuable, chiefly as indicating the probability of larger proportions of this mineral compound being found in other samples, and of the possibility of further inquiry proving, as I expect it will, that it was not the greater abundance of the green grains, but of the mineral phosphate rather, which rendered one bed of sand more fertilising than another, and that in some localities the phosphate might be found in such abundance, as to pay for extracting it as a useful

mineral, and for its subsequent manufacture into a portable manure.*

It is in favour of this expectation that Dr Henry Rogers and others have observed, that crystallised blue phosphate of iron is seen very plentifully as an incrustation upon fossils and other substances in these green-sand deposits—a circumstance which indicates the actual or former presence of phosphoric acid in considerable quantity in the superior beds of rock, or in the waters which trickle through them.

The formation of the grains of green sand is a very interesting subject of inquiry, both chemically and geologically. I cannot discuss the subject here. I may, however, observe, that when examined under the microscope, these grains partake very much of a common form—round or oval, and kidney-shaped—which has induced Dr Henry Rogers to regard them as produced by a natural deposition from hot solutions, containing the several constituents of which the grains consist. This ingenious explanation must be received with caution, chiefly because of the difficulty of showing under what circumstances solutions of such a kind, and in which marine animals would live, could be produced and maintained for so long a period over the large areas known to be covered by the green-sand deposits. If we so far modify the view as to allow the grains to have been formed, as so many other mineral concretions have been, in a semi-fluid mud spread over the bottom of a salt sea, the objections which might be brought against it would, I think, be less strong.

* I am happy to say that the search has subsequently been rewarded by the discovery of most valuable deposits of this mineral in the State of New Jersey. By these I believe that English farmers are likely to be first benefited, but, subsequently, I hope American farmers also will be brought to use, for the renovation of those worn-out soils, the same substances which the English farmer is willing to buy for the purpose of keeping up the heart of his own.

The production of the blue crystals of phosphate of iron, which are described as so plentiful in this formation in New Jersey, is also an interesting inquiry. They are evidently a secondary product—the result of slow double decomposition going on in the soil or in the rock. Iron pyrites abounds in these beds, and sulphate of iron produced by the slow oxidation of the pyrites, impregnates the waters that pass through the beds, and renders ferruginous the springs that issue from them. The contact of these solutions of iron with water containing phosphate of lime, would afford the materials for the production of phosphate of iron, which would be slowly deposited in insoluble crystals, and of soluble gypsum, which would be carried away in solution by the moving water. This is not an unlikely explanation of the occurrence of the crystallised phosphate of iron.

But the contact of the same solutions of iron with solid grains of phosphate of lime disseminated through the bed, would produce the same result. This I have proved by experiment. A solution of proto-sulphate of iron poured upon newly precipitated phosphate of lime, washed and dried at 212° Fahr., but not heated to redness, and left in a closely stoppered bottle for six months, has produced a superficial crust of white gypsum, an apparently unaltered layer of powdery phosphate beneath, and, between those, a beautiful indigo blue solution, from which crystals of blue phosphate may be expected gradually to deposit themselves.

The presence of crystals of phosphate of iron, therefore, in the green sand of New Jersey, deposited as the result of a decomposition of phosphate of lime, argues the presence of this mineral in the formation, and encourages the expectation of finding it in quantities which may be economically available.

Some ten or twelve years ago the Legislature of Pennsylvania resolved, that a geological survey of

the State should be made, and appointed a staff of surveyors under the able direction of Professor Henry Rogers, whose knowledge and labours in geology and natural history generally are so highly appreciated by those who, like myself, have had the pleasure of many years' acquaintance with him. This survey, after a lapse of five or six years, was completed. A large expenditure of money had been incurred on the part of the State, and of valuable life on the part of Professor Henry Rogers. The manuscript, with maps, sections, and drawings, was deposited in the office of the secretary of state, and there all have since been permitted to lie. The first cost is sacrificed to the dread of the expense of publication. Science is retarded, for she has to do again by other hands what had already been well done by most capable labourers. The reputation of the State geologist is sacrificed, because others are gradually anticipating and publishing what he ought to have had the credit of first making known; while the State itself, for the sake of a few paltry dollars, is losing the opportunity of acquiring for itself a distinction among the patrons and promoters of positive knowledge, similar to that which the New York State has obtained through the publication of the twenty quarto volumes of beautifully illustrated Natural History. A work which, when it came fresh from the hands of the State-surveyor, was full of novelty, may, in reality, be behind the state of the science—and valuable, therefore, chiefly to the history of scientific progress—when the State Legislature shall at length resolve upon its publication.

I cannot pretend to know how far a laudable desire to remove the stigma of repudiation may have restrained the hands of the State Legislature from spending money not absolutely necessary for the maintenance of State institutions and establishments, until the honour of the country was re-established in the eyes of its credi-

tors—but I may be permitted, with all the friends of American science, to regret that any pecuniary difficulties should be allowed permanently to impede the completion of so important and honourable a work.

In the State of Pennsylvania—of which this city, though not the seat of its Legislature, is the centre of its commerce and of its scientific and literary society — the numerous German population is a characteristic feature. Hitherto this part of the population has been considered as opposed to progress—as badly educated, and unwilling to lend itself to those enlightened legislative measures by which a rapid and energetic advance has been secured in the more northern States.

Perhaps, as a test of this opinion, it may not be unfair to compare the common school system of this State with that of the State of New York, which bounds it towards the north; and, for the purposes of such a comparison, we may take the populations of the two States, in round numbers, at three and two millions respectively.* Then the following table shows the actual condition of the common schools in the two States:—

	New York. Three millions.	Pennsylvania. Two millions.
Number of schools, . .	10,500	7,800
„ „ scholars, .	776,000	360,000
Average duration of school teaching, . . .	8 months.	4¼ months.
Months teaching for each 100 inhabitants, . . .	207 ...	76½ ...
Paid to teachers, .	1,100,000 dollars.	466,000 dollars.
Paid for each 100 inhabitants,	36 ...	23 ...

It appears from these numbers—1st. That the sums paid for instruction in the common schools are, in proportion to the population, one third less in Pennsylvania than in the State of New York.

2d. That the number of schools to equal populations

* In 1845, New York State contained 2,604,000—and in 1840, Pennsylvania, 1,724,000.

is nearly as great in the one State as in the other. But, as they are only kept open about half the time in Pennsylvania, they are in reality more costly in this State, in proportion to the work done, than in the State of New York. This indicates an indifference on the part of the parents to avail themselves of the opportunities offered them of educating their children.

3d. That the number of days' or months' tuition given to each child at school in Pennsylvania is little more than half that given in the State of New York—and to each hundred of the population little more than one-third.

The summary of this is, that the children at school are only half as well taught, and the people of the State, as a whole, only one-third as well as in the State of New York. This fact may be regarded as an indication both of the comparative mental condition of the existing inhabitants, and of what that of the next generation is likely to be in those two adjoining States.

The German farming population is blamed for the repudiation which a few years ago attracted so much attention. This class of men occupy much good wheat land in the central part of the State, and along the valleys which intervene between the successive ridges of the Blue and Alleghany mountains. Their farms are usually 100 acres, some are 200, and 300 is considered a large farm. In the neighbourhood of Philadelphia good land sells for about 100 dollars; but at a distance of 10 miles, from 40 to 50 dollars an acre—much the same as in western New York. Farm-servants receive 10 to 12 dollars a-month, or £30 a-year.

Agriculture in this State is represented to be in a very low and backward condition. There are a few county societies, but no general State Society like that of New York, supported and promoted by the patronage of the Legislature and the funds of the community.

Being situated on the immediate borders of the first slave States—Delaware and Maryland—the free coloured people, seen already in great numbers in New Jersey and New York, become in Philadelphia a class as interesting to the foreigner as the more numerous Germans. A few years ago the more humble and laborious out-of-door employments, as well as those of household labour, fell almost exclusively to their share. They were the porters, the draymen, and carmen of the city. They discharged and loaded the shipping, and performed other menial offices on the quays and rivers. But riots against the coloured people, which had begun in New York, were succeeded by others in Philadelphia, as far back as August 1834; and though a few friends did rise up at that time in their defence, yet the fear of the white mob restrained the hands even of men in office from displaying that energy in their behalf which justice not less than humanity demanded. The silent endurance of petty sufferings has been their lot almost ever since.

The Irish emigrants are their chief competitors for the humble unskilled employments they were accustomed to follow. By obtaining such labour, the Irish are enabled to indulge in their gregarious habits, to linger about large towns, to unite and act in masses, and so to obtain for their party a sensible influence both of a physical and political kind. But native-born craftsmen also combined against the more skilful of the free coloured people, and, at the period of the riots, attacked not only them, but such as were accused of preferring to employ them. Since that time the pressure against them has been kept up, and continued immigration from Ireland has caused this pressure continually to become stronger. Redress for ill-usage they find difficult to be obtained; so that, by degrees, they have been compelled in a great measure to give up their old occu-

pations, and many of them to seek new homes farther towards the north and west.

"Wherever the interests of the white man and the black come into collision in the United States, the black man goes to the wall." Such is the statement of those who, in America, profess to be the coloured man's friend. It is certain that, wherever labour is scarce, there he is readily employed; when it becomes plentiful, he is the first to be discharged. The whites are employed in preference, from sympathy with their colour, on account of their votes, or through fear of their political or other influence.

The centres in which the free blacks have from time to time collected prove this.

It has been so far satisfactorily ascertained that the natural increase of the free coloured race in these States is about two per cent per annum, when not materially increased by emancipation.*

Now, in the New England States, from 1810 to 1840, the number of free coloured people was nearly stationary. The natural increase, therefore, was for the most part driven out by the climate, or by the more active competition of the New England-born white men, or of the emigrants from Europe.

Up to 1830, again, the increase was more than natural in the States of New York, New Jersey, and Pennsylvania. The coloured people, therefore, had found a refuge and employment there. But since 1830 the increase in these States has been only one per cent, or half the natural increase; they have, therefore, in the face of Irish and German immigration, been scarcely able to hold their own, and great numbers have been driven into other States.

* Between 1830 and 1840 it was 20.8 per cent for the ten years. But many are of opinion that the decimal period ending in 1850 will not show an increase exceeding 15 per cent.

But into the slave States—Delaware, Maryland, Virginia, the Carolinas, and Georgia—they have not gone. All these States are too anxious to expel those they have among them already to give any facilities for immigration. In these States, in consequence, the increase has only been about one per cent, or half the natural increase; in other words, large numbers have been forced to migrate. The tendency is therefore to expel them from the whole of the Atlantic borders — an irresistible result, probably, in some of the States, of the vast immigrations of white labour, chiefly Irish, which are constantly pouring into all the Atlantic harbours; in others, of the fear of evil consequences from the intermingling of slaves and free men of the same blood.

Their refuge has been in the north-west, where the world is new, and labour of all kinds in demand. To Ohio, Indiana, and Illinois, their migrations have been directed. In 1830 these three states north of the Ohio River contained only 15,000 free coloured inhabitants. They now contain about 50,000, and of these Ohio alone has 30,000. In this direction, therefore, the surplus has gone from all the other States; and towards the valley of the Ohio still, and that of the Upper Mississippi, an outlet for the stream will probably be found for many years to come.*

An insight into the causes of social changes and migration movements, such as this, is very interesting. It is a hard thing for the poor coloured men to be driven from their employment and natural homes by a foreign immigration, as is the case at this moment in Philadelphia and elsewhere, and it is natural that opposition and dislike and disturbance should be the consequence. But a similar immigration has brought similar scarcity of food

* The State of Indiana has recently become jealous of the free blacks, and has proposed measures for preventing their increase, or of altogether removing them.

and employment among the native labourers of Great Britain, and driven thousands to new homes beyond the Atlantic. It may be said, also, that privations as great, though arising from a different cause, drive the Irish themselves from their paternal homes. And though the evils of the coloured people are not diminished, because they suffer in like manner with ourselves, yet we shall spare both reproaches and blame if we consider how much of all these evils is happening as the result of a natural course of events which is absolutely beyond our control.

Among other persons in Philadelphia, I spent some pleasant hours with Mr Lea, in looking over his extensive and very interesting collection of fresh-water shells, and in examining the supposed sauroid footsteps in old red-sandstone, of which he has published a figure. This city is rich in two most valuable collections of shells, of which that of Mr Lea is one; and there are few persons possessed of a scientific taste, whatever may be their special pursuit, who will not find in it much to interest, to instruct, and to suggest.

Jan. 28.—This morning, at 8½ A.M., I left Philadelphia by railway for Baltimore, crossed the Susquehannah at 11½ A.M. by a steam-ferry which took across both passengers and cars, and reached Baltimore at 1½ P.M., a distance of ninety-seven miles.

Along the Delaware, from Philadelphia to Wilmington, the country is generally low and full of creeks. The neck of land which separates the Delaware from the Susquehannah River is undulating, light, and sandy, and, when submitted to culture, its chief grain crop is Indian corn. It produces naturally thin forests of pine; and where the land has been left to itself, after these were cut down, a second growth of scrub oak has taken their place. These resemble the natural thin oak-barrens which overspread so large a surface of indifferent soil in the State of Michigan.

Beyond the Susquehannah, the railway passes through a flat, poor, and sandy region bearing hardwood, chiefly oak, and on which Indian corn, winter rye, and poor pasture are the principal agricultural products. We had now fairly entered upon the long pine-barren zone or terrace, of which I have already spoken as producing the large supplies of turpentine and pine timber in the Carolinas and in Georgia.

At Baltimore I was met by Dr Higgins, Agricultural Chemist to the State of Maryland, with whom I spent a very pleasant afternoon. The city is beautifully placed at the head of a wide bay, partly on a flat margin of the water, but now chiefly on the slope and summit of the elevated banks from which the eye commands the flats, and is carried over the creeks and lowlands beneath, towards the broader waters of Chesapeake Bay. It is well built, prosperous, and increasing in size. Employment is plentiful, and skilled labour commands a wage of about a dollar and a half a-day. The mechanics usually live in self-contained houses owned by themselves, of which there are whole streets in the city. These houses are fifteen feet in front and three stories high, and are built of brick, on leasehold sites held for ninety-nine years, renewable for ever. In a slave State, where the aristocratic principle is recognised, the dread of long leases and reserved rents does not exist, which so strangely agitates the communities of New England and New York.

The southern pro-slavery sentiment is still strong in Maryland, though the number of slaves has rapidly declined during the last twenty years. In 1830 the slave population of this State numbered 102,000, but in 1840 it had decreased to 90,000, while the number of free coloured people exceeded 62,000. The census of the present year (1850) will probably show a still more rapid diminution.

The city of Baltimore contains a population of about

120,000; and it is an exhilarating symptom, in connection with the slavery question, that not less than sixteen large free schools have been built in different parts of the city, and are maintained at the public expense. The progress of general education, the increase of a willingly labouring free population, and, above all, the growing unprofitableness of slave labour in cultivating worn-out land, must gradually loosen the hold which slavery has hitherto maintained upon the public mind of this State.

There is no State agricultural society in Maryland aided or supported by the public funds. An attempt was making at the time of my visit to form a general society for the three small States of New Jersey, Delaware, and Maryland, which, if liberally supported, would possess a strength and power not to be looked for or to be attained by the exertions of the friends of agriculture in either of these States separately.

Still the Legislature of Maryland has not been unmoved by the recent contributions of science to the progress of agriculture, and has been among the first to recognise the especial usefulness of chemistry by creating the office of "State Agricultural Chemist," and nominating Dr Higgins to the appointment, with the salary of 1500 dollars a-year. Part of the duties of this officer is to visit the different counties of the State, to give private advice and public lectures to the farmers, to collect soils, marls, and other substances, which it may be desirable to analyse, and to *analyse them on the spot*. The last of these duties is the only one to which any serious objection can be made. A peripatetic laboratory is inconsistent with correct analytical research. Besides yielding very imperfect results, it must also involve a great loss of the chemist's time to the State, and an unnecessary expenditure of money to himself, in securing rooms to work in in every different locality. This arrangement indicates a very juvenile knowledge of the nature and requirements

of chemical analyses, and will, no doubt, be altered as soon as the members of the Legislature become a little more enlightened as to the measures which are best to be adopted, with the view of effectually bringing about the important objects they have by this appointment so laudably desired to accomplish.

The city of Baltimore owes its prosperity in great part to its position as the port from which the intercourse is the quickest and most direct between the Atlantic and Ohio, Kentucky, and the other north-western States, to which the river Ohio is the principal highway. Through Baltimore lies the shortest route also from New York to St Louis in Missouri; and hence much light traffic, as well as many travellers, pass this way. Small as the State of Maryland is, with a population of only 500,000, its exports and imports are exceeded by those of only four States—Massachusetts, New York, Pennsylvania, and Louisiana—and the greater part of these pass through the port of Baltimore. This arises from its being, like Boston, New York, Philadelphia, and New Orleans, a port of transit, and the extension of railroad facilities must every year increase the amount of this transit trade, and add to the commerce and wealth of the port of Baltimore.

I enjoyed at Eutaw's hotel an exceedingly good and well-appointed private dinner with an agreeable small party of scientific friends. Among the luxuries of the season, for which Maryland is especially famous, we had the canvass-back duck, a Maryland ham, and Maryland apple-toddy.

The canvass-back (*Fuligula valisneria*) breeds far north on the Rocky Mountains, and descends to the Atlantic shores about the beginning of November. It is then found from the shores of Long Island to the mouth of the Mississippi, but is more abundant south of the Hudson. Its chief food is an aquatic plant, the

Zostera valisneria, growing in brackish water, and "it is prized by epicures as superior in flavour to every other water-fowl." It is comparatively plentiful at this season at the mouths of all the creeks and streams that open into Chesapeake Bay, and is in much request in the markets of Baltimore, Philadelphia, and Washington.

I do not know by what means their remarkable excellence is imparted to the hams of Maryland, but the apple-toddy, on which the State prides itself, is made as follows:—"Take a red-streak apple, roast it before a slow fire on a china plate, put it into a half-pint tumbler, mash it well, add one wine-glassful of good cognac, and let it stand twelve hours. Add then two wine-glasses of water, dust it over with nutmeg, put in a spoonful of white sugar—stir up well, and drink." This is genuine apple-toddy, taken as a winter drink—mint-juleps taking its place in summer. Among these jovial middle States men, a stranger has a chance of living according to his humour, which the determined temperance-upholding people of the north-eastern States scarcely permit.

Among the interesting chemico-agricultural facts connected with this State, communicated to me by Dr Higgins and others, I may mention the existence of a belt of red clay-land, known by the name of the "Mulatto soils," produced by the crumbling of the metamorphic upper azoic rocks. These contain chlorite, talc, and epidote, crumble readily, and form a soil of a red colour. They are considered by Professor Henry Rogers to be the origin and source of the marls and red-colouring matter of the new red-sandstone deposits of New Jersey, which from these rocks, at a remote geological period, were carried by a then existing river to the place where they are now found. These Mulatto lands possess peculiar agricultural capabilities; but the most remarkable character communicated to me was the striking benefit

experienced upon them from the use of gypsum. A single bushel an acre, applied to these red clays, was said by Dr Higgins to produce quite a wonderful effect. Careful analyses of repeated specimens of these soils might throw some light upon the still obscure source of the virtues of this mineral substance in promoting vegetation. In Pennsylvania, I was informed that, as in western New York, its good effects were most observable on limestone soils.

Jan. 29.—At 9 A.M. I left Baltimore for Washington, where I arrived in less than two hours. The road ran very much through the tertiary sands, in which, where cuttings occurred, occasional beds of decided green sand were seen, the chemical nature of which it would be interesting to compare with that of the similar coloured sands beneath the chalk. These tertiary sands are very generally ferruginous, and, in the hills around Baltimore, the beds of clay which occur interstratified with the sand are rich in nodules of hematite and carbonate of iron, which are mined for and smelted in the neighbourhood. The production of these nodules, which is a consequence of the presence of layers of clay capable of arresting the ferruginous waters descending from above, is an interesting fact both in a chemical and an economical point of view. It has much similarity, also, both as a fact and in its cause, to the occurrence of clay ironstone nodules, and of beds of carbonate of iron, among the shaly beds of our coal-measures.

In Washington I took up my quarters with an old friend, Dr Henry, formerly of Princetown University, well known in England for his electro-magnetic and other physical researches, and now secretary to the Smithsonian Institution at Washington.

CHAPTER XXV.

City of Washington.—Obstacles to its rapid growth.—No permanent court or centre of fashion.—Mileage and constructive mileage.—Nicknames of the several States.—Mr Calhoun.—President Taylor.—His feeling towards England.—Agricultural bureau at Washington.—Patent Office reports.—Intended sphere of the agricultural bureau.—Difficulty of obtaining correct agricultural statistics.—Alleged wheat-exporting power of the United States.—Wheat produced by the free and slave States in proportion to their inhabitants.—Can New York export any home-grown wheat?—Surplus wheat of the whole Union.—Exaggerations in the estimated produce of wheat in the States.—Quantity actually exported from the United States.—This quantity likely to diminish.—Influence which the United States is likely to exercise over the internal and social economy of European states, and especially of Great Britain.—Great prospects and elements of greatness in the United States.—Influx of restless energy and talent.—Importance of peace to the United States.—Influence of new blood on their progress.—Mutual influence of their institutions and ours.—Changes in America since the Revolution.—Extension of the influence of the people.—All religious sects equal in the eye of the law.—System of free-school education.—Active energy of the United States.—Gradual assimilation of their institutions and ours.—Much depends on the behaviour of the democratic party in America.—Effect of a dissolution of the Union.—Chances of such a dissolution.—Dangers from the side of the Pacific.—Influence of California and Oregon on the future tariff.—Annexation of Canada and Cuba.—Obstacles in the way of such Annexation in the United States.—Consequences of such Annexation to the Canadas: to the Romanists and Conservatives.—Natural bias of talent and ambition in the provinces.—What Washington offers to the ambitious of the provinces.—Advantages of uniting more closely our home and colonial possessions.—Wide field then for ambition.—Importance of this to the mother country.—Why few rich or noble go to the colonies.—What a great and patriotic statesman might accomplish.

WASHINGTON—the city of magnificent distances—has been often described. That the original plan of its projectors will never be completed, and the magnificent streets radiating from the capital filled up, it would be hasty to say. Government offices, churches, hotels, city-buildings, and national institutions of various kinds, will gradually dot over the large space comprehended in the grand design; but there are circumstances connected with the state of society in Washington, as the seat of the United Government, which will long stand in the way of its acquiring the distinction of a great capital, similar to that enjoyed by London, Paris, Vienna, or the other capitals of Europe.

The permanent inhabitants of Washington are comparatively few in number. The President and his Cabinet retain office for four years, at the end of which time, unless the President be re-elected, there is generally a total change in all the official appointments, descending much lower down among official people than is usual upon a change of Administration among us. The Senate holds office for six years, but the House of Representatives only for two. Thus there is a constant change in the persons whose public duties call them to reside at Washington, and they have no inducement to make it a permanent home for themselves and their families.

Besides, the public officers and members of Congress are generally more or less dependent upon their Government allowances for the means of subsistence. Of the 300 representatives and senators, a large proportion are not in circumstances to enable them to incur the expense of a long yearly residence at Washington, while they, at the same time, neglect their own business at home. But their allowance of 8 dollars—about two guineas a-day—is insufficient to maintain a family and household; and hence hotels and boarding-houses are the usual residences of members of Congress. Were they all wealthy

men, able to keep up expensive establishments, and to give dinner-parties, a different state of society would arise in Washington—large residences would become in request, and Belgravian Squares and mansions would by degrees fill up the unoccupied streets which are as yet seen only on the plan of Washington.

The absence of a court or centre of fashion and permanent entertainments deprives Washington also of that attraction, for those who are rich, which takes so many to the capitals of Europe to spend their winters, and which collects within their walls so many thousands of those classes of society who minister to the luxury and are supported by the artificial wants of the possessors of wealth, refinement, and taste. Washington, in truth, is merely a place of business, and is frequented by people who have business to transact, and by whom a tolerably comfortable temporary residence is all that is desired.

It is amusing to learn the shifts to which the inadequacy of the stipend of 8 dollars a-day has occasionally driven, not only individual members—for these it would be improper to speak of—but the whole body of the Congress, with the view of adding, in a conscientious manner, to their means of living.

Besides the 8 dollars a-day, members of Congress are allowed, under the name of *mileage*, 8 dollars for every twenty miles, to pay their travelling expenses in going and coming from their place of residence to Washington. This, for members from a great distance, amounted to a large sum—from 1000 to 2,500 dollars—though the cost of travelling is now very much less than it used to be. But, under the name of *constructive mileage*, members were allowed the same sum in the event of a special session being called, whether they had gone home or not—and it was always allowed to members of the Senate at the inauguration of the President, which is once every four years. When a new President comes into office, Congress

adjourns on the 3d of March. The President is inaugurated next day, and the Senate is "immediately called into session to act on the nominations of the new President; and though not a man of them leaves Washington, each is *supposed* to go home and come back again in the course of the ten or twelve hours intervening between the adjournment and the reassembling; and for this supposed journey the senators are allowed their mileage."

The session of Congress of the present year, (1850,) however, has altered all this. It has been ordered that "no member of Congress residing east of the Rocky Mountains shall receive more than 1000, and no member or delegate west of those mountains more than 2000 dollars," and constructive mileage is abolished.

At Washington the stranger sees the representatives of every district of this wide country. They come with the peculiar manners and nicknames of their several regions. Those of Vermont are Green-mountain Boys; from New Jersey, they are Jersey Blues; from Ohio, Buck-eyes; from Michigan, Wolverines; from Indiana, Hoosiers; from Illinois, Suckers; from Kentucky, Corn-crackers; from Tennessee, Red-horses; from Wisconsin, Badgers; from Missouri, Pukes; from Mississippi, Swelled-heads;—while, with more dignity, those of New Hampshire speak of their home as the Granite State; of Massachusetts as the Bay State; of Connecticut as the land of steady habits; of Kentucky as the Banner State; of New York as the Empire State; of Pennsylvania as the Key State; and of Virginia, proudly as the Old Dominion! Arkansas is content to be called the Bear State, and Rhode Island with the affectionate familiarity of Little Rhody.

At the time of my visit the agitation upon the slavery question was at its height. The first great speech of Mr Clay on this question was made on the morning of my first visit to the Senate, and the well-known squabbles

in Congress and on the streets, and the speeches of the other leaders, followed in quick succession.

Among these leaders, now gone, I may speak of Mr Calhoun. Within a week or two of his death, when supposed to be convalescent, I had the honour of an interview with this distinguished statesman. Of Irish descent through a Green Island father—Scoto-Irish by blood, as his name implies—he inherited the eloquence and energy of his father's country, with the long-headedness of that of the Scottish Colquhouns. He was an honest and most sincere man, though so devoted an advocate and defender of southern rights and domestic institutions, as he called them. He was, as all knew, a man of high ambition; but his hopes of the loftiest official dignity of his country were sacrificed more than once to the principles he had unflinchingly maintained. With all my predilections in favour of freedom, I could not look upon Mr Calhoun, for nearly forty years one of the most zealous upholders of the slave interest, as I saw him in his sick chamber, without feelings of respect and regret. The broad forehead, massy head, and still bright eye, all brought out most distinctly by the shrunk and withered face beneath, impressed me with a sense of the intellectual power he had so often wielded in defence of his own and his party's views. Though he rallied sufficiently afterwards to deliver his last—to him too exciting—speech in the Senate, yet I felt in his presence that I was conversing with a dying man; and I quitted his apartment with the awe which comes over us when we contemplate great powers on the eve of being called upon to render a great account.

During my brief stay I had also the honour of a private audience with the late President Taylor. The attendant circumstances were very different from those which usually accompany audiences with the chief magistrate of great countries in Europe. A single servant in

plain clothes, himself familiar enough in his address, took up our cards without any previous application, and, returning immediately, conducted us to the first floor, and there ushered us at once into the presence of a plain and plainly dressed man of no pretensions, not above the middle height, and who shook us heartily by the hand, as the North American fashion so universally is. We spoke of the agricultural department or bureau, which he had proposed to Congress to organise, subordinate to the Secretary of State. I expressed my opinion of the policy and advantage of giving a definite and recognised place in the affairs of the nation to an interest so important in the United States as its rural industry. As a farmer he was surprised that the step had not been taken by his earlier predecessors. Polk, trained to a peaceful profession, had directed his own and the people's energies to the prosecution of war. Taylor, whose trade had been fighting for forty years, was anxious to promote the arts of peace. We spoke also of Great Britain, and of the blessings of union between the two nations. "If England and the United States agree," he said, "they may keep the whole world at peace." I left the old man with a pleasant and kindly feeling; for with all he said in his simple, plain, unstudied way, I cordially sympathised, and he spoke it naturally enough to satisfy you that it was the expression of his everyday thoughts.

The agricultural bureau, of which I have spoken, is to occupy itself with everything connected with the actual condition and mode of improving the numerous departments of rural industry, which the various soils and climates of this wide territory either do already, or are fitted to prosecute. Only Russia, of all existing dominions, possesses so wide a field for the application of rural knowledge of every kind, within what may be called its *home* territories, as the United States; and certainly there is none in which the productions of the soil form a larger

proportion of the natural wealth. The importance of drawing the national attention to this right arm of the State has not been wholly overlooked by the authorities at Washington during the last two or three years, though its interests have been consulted in an indirect manner only. The power of granting patents is a right of the Federal Government, and a Board of Commissioners of Patents, with a Museum of Models of Inventions, has for some time existed at Washington. The report of this board presented to Congress, and printed for general distribution, in addition to the descriptions of new machinery and of patent processes, has gradually been made to embrace almost the whole range of rural affairs also, both practical and theoretical. Hence, for two or three years, the report of the Commissioners of Patents has been more valuable to the statist and rural economist than to the mechanic. The incongruity of this circumstance, with the confessed importance and practical value of the agricultural part of this report, has doubtless been one reason for the institution of a specially agricultural department under the Secretary of State. This bureau will hereafter present its own report to Congress, separated from extraneous matter, and embracing topics which that of the Patent Office could not overtake.

The plan of this department, still immature, is intended to be made conformable to the lights of the age. The political economy, the statistics, the theory and the practice of the rural arts, in all their departments, are to be embraced as the organisation becomes completed. A museum of implements and seeds, a depôt of foreign seeds for general distribution, a chemist and a laboratory of research, an active literary officer well acquainted with practical agriculture, to digest and methodise what others prepare for the annual report of the department,—these, under the direction of the Secretary of State, are some

of the things to which attention has been first directed; and there can be little doubt, that the result will not only prove valuable to the States, and creditable to the Federal Government, but will exercise a wholesome influence on the proceedings of other countries also.

It is very desirable, with a view to the interests of British agriculture, that the statistics not only of our own produce, but of that of the United States, should be with some degree of accuracy ascertained. And yet there is probably no branch of national economy in respect of which accurate information is more difficult to be collected. In our country, where rents have to be paid, the farmer suspects every close inquiry to be made with an eye to the increase of his rent, and there is, consequently, a disposition to diminish; whereas in the United States, from other causes, there is a disposition to exaggerate the amount of produce yielded by the land. It is not possible, therefore, to obtain as yet very trustworthy data by which to judge of the direct and permanent influence which the wheat-lands of the whole North American Union are destined to exercise upon those of Great Britain. Numerical quantities, indeed, have been from time to time confidently put forward, as representing the amount of grain which the States will be able to send to England from year to year, which are very different from those to which the same data would lead us at home, were England the country in question. It will throw light upon the wheat-market-affecting capabilities of the States, if we consider some of these numbers for a moment.

The total amount of wheat produced in 1848, within the Union, was estimated in the Patent Office reports at 127,000,000 of bushels. Taking the population at 21,000,000, and it is now nearly 24,000,000 — this gives exactly 6 bushels a-head. In England we should say this quantity was too little to feed the people,

and that we must have a large importation of foreign wheat to make up the deficiency. Had the inhabitants of the United States the same wheaten-bread-loving inclinations and tastes as our English people, they would not now be producing enough for their own consumption, but would be importing wheat from Europe. It is the Indian corn crop, however, which modifies their habits, and has lessened the quantity of wheat consumed by them, as the use of oatmeal has done that by the Scottish peasantry. Again, the free States, with 12,000,000 of free men, (now 14,000,000) are said to produce 82,000,000 of bushels of wheat, which is something less than 7 bushels for each individual. The slave States, on the other hand, with 6,000,000 of free men and 3,000,000 of slaves, produce 45,000,000 of bushels, or 7½ bushels for every *free* man. If we allow all the slaves to be fed on Indian corn, there would remain these 7½ bushels for each free man, which, with the superior habits of living adopted by the whites in these States, do not appear to be too much.

Taking, therefore, the white people only in the Union as eaters of wheat, there are produced on an average, if the estimate for 1848 be near the truth, about 7 bushels of this grain for every individual, or seven-ninths of an imperial quarter.

When speaking, in a previous chapter (VII.), of the quantity of wheat produced by the State of New York, I expressed the opinion that, notwithstanding the rich western lands it possesses, this State as a whole does not grow more than is necessary for its own consumption. The average produce of that State is estimated at five bushels for each inhabitant. And supposing, as is usually done by English statists, that eight imperial bushels, or a quarter of wheat, are necessary for each individual, then New York, which produces five, cannot feed its population as the English population is fed. It cannot, that is, unless

either the people of New York live less on wheaten flour, or the English allowance be too high.

As to this last point an opinion may be formed from the fact that an allowance of 8 imperial bushels will give a man about 19 ounces of well-baked bread every day of the year, while 5 bushels will give 12, and $3\frac{1}{2}$ bushels only 8 ounces of bread a-day.*

There is no doubt that a very large quantity of Indian corn is consumed in the States—a quantity which increases as we go south and west, and that this must lessen both the demand for wheat and the amount of this grain actually consumed. If we suppose that, in the State of New York, as much Indian corn and buckwheat are consumed as are equivalent to four American bushels of wheat, we have, then, five bushels of this latter grain required by the people.† But this is the quantity which New York actually produces per head of its population; so that there are really fair grounds for believing that in ordinary seasons, and judging from the circumstances and habits of the English people, the State of New York cannot have much wheat to export of its own growth.

Returning to the total produce of the Union, we may allow that the 9,000,000 of the slave States produce wheat enough for their own consumption—since the 45,000,000 of bushels they raise are equal to 5 bushels a-head for the whole population, or $7\frac{1}{2}$ bushels each for the 6,000,000 of whites, if the 3,000,000 of slaves be fed wholly on Indian corn.

There remain, then, the 82,000,000 bushels produced

* By our prison regulations, a man, who for punishment is put upon bread and water only, is allowed a pound of bread a-day. But he cannot be kept in health longer than three days on this allowance, and the regulations therefore order an addition at the end of that time. For a man doing ordinary work, less than one-half more than this allowance cannot be considered as sufficient.

† There being nine such bushels in an imperial quarter, as I learn from an able statistical pamphlet by Mr M'Queen.

by the free States with a population of 12,000,000. If we suppose these also to consume five bushels each, or 60,000,000 in all, there will be a surplus of 22,000,000 bushels, or nearly 3,000,000 quarters for exportation.

I doubt very much if the United States can, in ordinary years, spare even so large an export of wheat as this to meet the united demands of New Brunswick, Nova Scotia, Newfoundland, the West Indies, and their many other markets besides that of England; and, as I have elsewhere stated, I believe the exportable wheat of the North American continent *as a whole* is already a diminishing quantity.

With this opinion I do not expect that my Transatlantic friends will agree; but I state my own present belief with my present knowledge, and I have given some of the reasons which have led me to adopt it. I think the truth of far more consequence to both countries than hasty exaggerations in either direction. I hope, therefore, that some may be found on the western side of the Atlantic who will be ready to discuss the question with a desire of attaining the truth only, and without a view to the accumulation of political or other capital, among those who may read their lucubrations.

The statists in this city of Washington, by whom the documents are prepared which have been published in the "Patent Office Reports," assume 3 bushels of wheat as the maximum average consumption of this grain by each individual of the whole population of the United States. This, for 22,000,000, makes a gross consumption of 66,000,000 of bushels; and as the whole produce for 1848 is stated at 127,000,000, there remain 61,000,000 of bushels for exportation! This is very much larger than my estimate of 22,000,000, and I am satisfied is very much overstated indeed.*

* See, also, Patent Office Report for 1847, where the produce for that year is estimated at 114,000,000, and the consumption at 62,000,000, by a

Two facts will, I think, satisfy the reader on this point.

First. The estimate of the total produce of wheat in 1847 was 114,000,000 of bushels. This sum was obtained by adding together a series of numbers representing the estimated produce of each State. Now, among these numbers, the State of Michigan is set down as producing 8,000,000 of bushels, while the report of the authorities of that State make the produce in 1848 only 3,700,000 bushels! I infer, therefore, that the total estimated produce of 114,000,000 bushels for the whole Union in the year 1847, and of 127,000,000 in 1848, are of the nature of rude guesses—as our own are at home—rather than trustworthy data upon which we can build safe conclusions, and that both these yearly estimates err very considerably in excess.

But if the total produce be taken too high, the surplus said to remain for exportation, whether calculated according to my allowance of 5 bushels, or to the allowance of 3 bushels, as the consumption of the people per head, is too large also.

Second. The total export of bread-stuffs of *all kinds* from the United States, up to 1846, had only once (in 1840) exceeded in value 18,000,000 dollars. In the three succeeding famine years, when so much Indian corn was sent to this country, it rose very much higher. For the four years from 1845 it was—

1845, ...	16,743,421	dollars.
1846, ...	27,701,121	„
1847, ...	68,701,921	„
1848, ...	37,472,751	„

Now if, for the sake of simplicity, we take wheat at

population of 21,000,000, allowing 3½ bushels to each free person, and none to the slaves, or 3 bushels to each individual of the population. This left an exportable quantity of 52,000,000 of bushels for that year. They suppose that each individual consumes 5 bushels of Indian corn, in addition to his 3 bushels of wheat.

an average price, at the place of export on the Atlantic border, of only one dollar a-bushel, which is from 10 to 20 per cent below the price it usually brings, and suppose the whole export to have consisted of wheat in the raw state, without any expense of manufacture added to it, each dollar in value of the exports will represent a bushel of wheat. The average export of the States thus estimated did not, up to 1846, exceed 17,000,000 of bushels, and in 1848 did not exceed 37,500,000 of bushels of wheat —a little over 4,000,000 of imperial quarters.

If, of the crop of 1847, there were really 52,000,000 bushels of wheat *alone* to export, and in 1848, 10,000,000 more, what became of it all? If even 37,500,000 of bushels were sold, the rest must have been a drug in the market, and must have reduced the value at New York to a mere nominal price. But if nearly one-half of the bread-stuffs exported during the three famine years consisted of Indian corn, as was most probably the case, there could not have been a larger quantity, in all, than about 20,000,000 of bushels of wheat sent from the United States to all parts of the world.

It is fair and reasonable therefore, I think, to conclude, until we have better data, that the wheat-exporting capabilities of the United States are not so great as they have by many in Great Britain hitherto been supposed; that they have been overstated on the spot, and that our wheat-growers at home have been unduly alarmed by these distant thunders, the supposed prelude of an imaginary torrent of American wheat which was to overwhelm everything in Great Britain—farming, farmers, and landlords—in one common ruin.

I have said that the wheat-exporting capabilities of North America, as a whole, excluding Upper Canada—in regard to which I would reserve any decided opinion—are lessening rather than increasing, though it may be ten years or more yet before they become very distinctly

sensible. The main reasons for this opinion, as I have already given them in Chap. VII., are—1st, That the virgin soils are already, to a considerable extent, exhausted of their first freshness, and that a comparatively expensive culture, likely to make corn more costly, must be adopted, if their productiveness is to be brought back and maintained; 2d, That the new settlers live poorly and hardly at first, and, as their wheat is the only thing that they have to sell, confine themselves for some seasons to potatoes, buckwheat, and Indian corn, and send the wheat to market; but as they become more easy in their circumstances, retain more of this grain for their own consumption, while they produce it also at a greater cost; and 3d, That as the population increases, that of wheat-consuming individuals, who do not raise their own food, increases also, and thus every year a larger proportion of wheaten food will be required and retained at home.

If the population of the United States, exclusive of California, be now nearly 24,000,000, and if it be increasing, as is said, at the rate of 1,000,000 a-year, so as to promise to these States in 1860 a population of 34,000,000, then it is very safe, I think, to say that in 1860 their wheat-exporting capability will have become so small as to give our British farmers very little cause for apprehension.

From the important English as well as American interests which are involved in this discussion, the reader will understand how much reason we have to be satisfied with the establishment of the agricultural department at Washington, to wish that it may have the pecuniary means and the intellectual ability both to collect and to diffuse accurate information, and, in regard to some of its objects at least, to desire that our Government should imitate the example of the Federal Government of the United States.

I have already said that the proceedings of the Federal Government may, in this matter, exercise a wholesome influence on those of other countries also. And, indeed, there is no point of view in which the growing community of the United States is more worthy of study on the part of European countries, and especially on the part of Great Britain, than that which displays the influence they are destined ere long to exercise over opinions and institutions on this side the Atlantic.

They possess, indeed, many features which, in connection with such a possible influence, make them interesting to the inhabitants of Great Britain. Great in the vast extent of their territory, they loom large in our eyes when we compare our little sea-girdled island with the breadth of surface which they occupy. Great in the future prospects which these wide continuous possessions, taken in connection with their past material progress, open up—prospects which many circumstances beyond human control may overcloud, but which at present are brighter, perhaps, than those of any other existing power—these great prospects cause us to regard them with a respect which neither their present power, nor their actual character as a people, could command. There are elements of greatness, also, of an intellectual and moral kind, which we in England can well appreciate, both in the staid energies they inherit as a people, and in the more feverish spirits of individual men, whom restlessness, or natural impatience, or individual disappointment, or uncontrollable discontent, or defect of principle, or the laudable ambition of bettering their worldly condition, or the want of a ready field for conscious talent, or the heavy hand of arbitrary power, is yearly pouring into their Atlantic harbours.

In reference to this latter element of greatness and

progress, how important, above all other things, is peace with Europe to the United States! The revolts and revolutions and proscriptions of Continental, and the home discontents and overflowing populations of Insular Europe, are the life and aggrandisement of the United States. New emigrants are not mere additions to the tillers of their virgin soils, or to the ware-makers of their workshops —new dragons' teeth, the promise of armed men who are to spring up for their future defence. They consist of, or at least comprehend, those daring and resolute if not always prudent men who are driven from disturbed, or who voluntarily leave more peaceful countries. Thus, in mind and force of character, a stream of select men is constantly flowing from Europe to America, by whose more energetic agency the filling up of the vast western continent is hurried forward, its material resources developed, and, by the sacrifice of many foreign lives, the first difficulties of settling it overcome. But disturb, by the cannon of war, the now undreaded navigation of the Atlantic, and this stream of brave hearts is arrested. The population will, like that of European countries, thenceforward augment by a natural increase of home-born tamer men only. The superfluous mind of other countries, the greater force of character which is produced by the breaking-up of home associations, and by the excitement of a new world, and the influence of its example on the minds and character of the native-born, will all be lost. The great breadth of unsettled land would then, like the wild forests and plains of Russia and Poland, rather indicate what the country under other circumstances might become, than what, within any assignable time, it is likely to be.

In our eyes, also, the United States are interesting—I might almost say there is a bond of endearment between us and all North America—not only because of its being peopled by a race of kindred blood, but because it holds

within its wide borders actual members or near kinsmen of almost every family in the United Kingdom—binding hearts together, and uniting the opposite continents by cords and sympathies more sensitive and delicate still than those of the magic telegraph.

It is to be observed that, in proportion as a country is great in superficial extent, in natural resources, in population, in growing wealth, or even in manifest energy, in such proportion we feel constrained to respect it. And from respect to imitation the step is natural and easy. We do not carefully analyse, most men are unfit to detect, the true sources of its greatness. We connect its peculiar greatness with its political and social peculiarities, and we are inclined to imitate the latter with a view to insure the former.

Now, the common speech and literature of our two countries gives this tendency full opportunity of manifesting itself, and lends to the institutions of each a moral influence over those of the other, which, as I have said, is more deserving of serious regard than any other aspect in which we can look at the United States. Our journalists talk alike to either people. Whether published in London or Washington, in Liverpool or New York, the periodicals of the day are circulated among, read by, and directly influence thousands on either side of the Atlantic. They tell also upon many more, through the editorial and other comments which they call forth in metropolitan and provincial papers. Upon the population of no other country in Europe can what passes in North America exercise a tithe of the influence it does in this way upon the population of the British Empire.

Now there are certain broad lines of national progress in which we have gone in advance of the United States —as in the abolition of slavery, the adoption of the principles of Free Trade as a basis of national polity, and

in the recognition of the rights of humanity, and a regard to the advancement of the human race as a modifying influence in all international concerns. As respects these lines of advance, our example will have its weight with them. On the other hand, there are lines of social and internal progress, upon which they have far outstripped us, but along which their example will in like manner hasten the forward movement among ourselves. These are chiefly such as with us are more or less obstructed by old habits, customs, vested rights grown up under ancient laws, and other hindrances, which in a new country are unknown.

Now, among the most important of such changes which have taken place in the United States since their separation from Great Britain, I may enumerate — first, The extension given to the popular or democratic element in the management of public affairs, involving the abolition of the law of primogeniture, and the shifting of political power from property to numbers. Second, —the equalisation of all religious sects in the eye of the law, and a general comparative lowering of the social status of what in Europe are regarded as the more favoured classes of the clerical profession. Third,—a provision, at least in the free States, for the general secular education of all classes in the common schools, and for the higher education of the more aspiring in numerous academies and colleges. This provision, by making a certain amount of learning general, and the attainment of more very cheap, has taken from moderate learning the moral weight and veneration which, among less instructed nations, has hitherto attended it, and has placed the learned professions, generally, in a lower relative social position than they occupy even among ourselves.

Certain movements in these several directions have been made in our institutions also, in regard to the value

or desirableness of which men of different political parties are, of course, very far from being agreed. But, looking at the matter abstractedly, and apart from our own individual wishes, it is not to be denied that the moral influence of which I have spoken is daily recommending to us more strongly the kind of changes which have been made in the States, in reference to the disposition of political power and taxation, and to the religious and educational interests of the people. The tendency from common literature, language, and blood, is to an assimilation of institutions. But to this is to be added further, the influence upon us of that respect which we feel for the large territory, growing power, and living energy of the United States—an energy we respect the more, as it is an offshoot of our own. And although this energy does not, in my opinion, anywhere in America exceed what is every day displayed in a thousand different spheres in our own more artificial society, in the mutual elbowings of the men among us who are struggling to elevate themselves, and in other forms which are adapted to the more thoroughly developed condition of our national resources; yet we respect it the more, because, on comparing the United States with all other countries, except our own, they stand out as a fervid mass of moving mind, beside which other nations seem cold and motionless.

How far the present generation may live to see this probable assimilation of the institutions of the two countries brought, it is impossible to say. Much will depend upon the moderation, steadiness, and political morality displayed by the democratic population of the United States. We possess what we esteem a happily balanced constitutional Government, in which neither the popular, the aristocratical, nor the monarchical element prevails to a degree inconsistent with individual happiness or with national welfare; and the example of our past

prosperity, and freedom from great convulsions, has served to recommend such free institutions to the nations on the Continent, and to make them an object of desire at least to the mass of their people.

But if the progress of democratic feeling in the United States should degenerate into the absurdities of the Red Republicans, of the impracticable perfectionists of Germany, or of the disunited patriots of modern Italy—if it should appear that even an educated people cannot be safely trusted with entire political power, then not only will progress in a popular direction be stopped among us, but we shall feel inclined to retrace our steps, and shall be in danger of obeying the solicitations of the more despotic Governments of Europe, rather than those of the more liberal race to which we belong.

At present, the influence of the United States upon the British mind is decidedly strong in favour of advances in a popular direction; and the appearance of things in the States generally, and in Washington, the seat of Government, leads to the idea that this influence will increase for some years to come, and that the political power of the masses among us will, by little and little, be still further enlarged.

It may be said that the seeds of disunion are already scattered throughout the Confederacy, and that, should a separation take place, such a shock would be given to the popular power as would much arrest the tendency to assimilation between them and ourselves.

But the existence of two, or even three, powerful republics instead of one—however much it might lessen the apprehension with which other independent countries look forward to the future growth of a vast dominant power, swayed by popular impulse, and wielding the resources of a hundred millions of men—would certainly not lessen the influence of North America in recommending freer institutions to the people of Europe.

A want of reverence for law at home, and of political morality abroad, may destroy that influence; but the simple multiplication of prosperous republics will increase it.

The dissolution of the Union was a topic much discussed everywhere in the States during my stay. In Washington, Clingman and his followers had already brought it up in Congress as a thing to be expected, were California admitted, and other Free State measures adopted. Even Mr Calhoun was said to be of opinion that the time had arrived when the Confederacy was strong enough to bear dividing into two; and that the interests of the northern and southern States were now sufficiently diverse to require it.

But for this extremity the time has not yet come. The hearts of both ends of the Union are still too proud of their growing strength, and of belonging to a great country, willingly to forego this boast, without some most serious cause. And although, in theory, the federal compact is a voluntary union of sovereign States, which may be dissolved whenever any one or more States think their interest will be promoted by the separation; yet when an emergency arrives, the majority, if large, will resist such a separation by force of arms, and compel the adhesion of the refractory States. Such, at least, was the temper of many in the northern States whom I heard speak upon the subject, and who firmly believed in the power of the free States to repress all rebellion against the Union. It amused me to hear men who, in one breath, talked of annexing Canada and Nova Scotia, threatening vengeance in another against the traitor States which should break up the integrity of the Union.

It has become, however, a matter of grave doubt with many in the eastern States, whether the danger of disunion is not now greater on the coasts of the Pacific.

Will California and Oregon submit to have their laws made for them so far off as Washington? Will they consent to pay import-duties at these remote spots, not merely for the maintenance of a Federal Government, but for the protection and encouragement of manufactures in the New England States, with which their connection is still more distant? In a few years, when the Anglo-Saxon population on the Pacific shall have increased, and become somewhat consolidated, such questions as these will undoubtedly come up, and, as a first result, a tariff based upon principles not very different from those of Free Trade is an almost inevitable consequence. What further may follow it is premature to discuss.

The question of Annexation connects itself most closely with that of "dissolution of the Union." "If Canada were annexed," said the free soilers of New England and New York State, during the late dissatisfactions in Canada, "we should be able to master the slave States, and form, if we liked, a powerful free republic." On the other hand, "If Cuba were annexed, we should be able to retain our first preponderance," said the slavery defenders of the south; "and, if that were contested, to form a separate Confederation in spite of the free States, and equal to them in strength."

To the annexation of Cuba I doubt if any very serious objections would arise even in the northern States of the Union. They never seriously opposed, at least by their representatives in Congress, either the annexation of Texas or the war with Mexico. It would add to the apparent power and wealth of the Confederation, and would be a plea for subsequent attempts upon the British Colonial possessions. But the storms and compromises which have attended the admission of California, show the amount of opposition which the south would raise against the annexation of Canada, without a previous or

simultaneous possession of Cuba. Although, therefore, the States which border upon Canada may long to have this province in the Union—and some even of the leading men of the Union may have expressed themselves strongly in favour of it—yet a question involving the addition of at least four more free States would prove a very embarrassing one to any Cabinet in Washington which should venture to entertain or encourage it, independent altogether of the disturbance it might create in the international relations with Great Britain.

Of the two movements towards this object which have been made in Canada, the first was promoted mainly by the Roman Catholic section of the community, the second by the Conservative party of Upper Canada chiefly, after their exclusion from the official situations they had held so long.

But to neither of these classes in Canada would any special good flow from a union with the United States. The Roman Catholic body, as a whole, would acquire more power in Congress—and with a view to this end, as a greater good to the whole, the Romanists in the States may sympathise with and encourage their brethren in Canada, to bring about this annexation—but in the province itself they would certainly dispossess themselves of the position they occupy as the church of Canada East, and they would very much endanger the large landed possessions by which they are at present enriched.

Then, as to the Conservative minority in Upper Canada, they would be driven still further from office by annexation. As was the case in the States when Jefferson came into power, the democratic element would increase in strength after the change; and a party which, under British rule, did not know how to yield for a time to the overwhelming force of a popular majority constitutionally obtained, would be obliged, after the annexa-

tion, to take up a new political position, very considerably in advance of its past professions, or be content to surrender all hope of materially influencing for the future the affairs of the new State.

One who has been in these colonies, however, who has looked candidly about him, and has weighed fairly what he must have heard from the lips of some of the colonists, will—unwillingly perhaps to himself, yet of necessity confess—that the talent and ambition of these North American provinces, of all parties, is either secretly or openly on the side of change. And it cannot be otherwise. Talent and ambition abound among the 2,000,000 of British subjects in North America, as much in proportion, at least, as among the 30,000,000 of our home islands. Yet how different the sphere in which these talents may be employed—how much humbler the position, the dignities, and the commands to which the ambitious Canadian or Nova Scotian may look up! Although, therefore, the final and permanent position of every man, and that of his family, must be obtained and retained in his own State and country, yet it is plain that Washington presents to every citizen, to every stripling in the United States, a field of ambition which, under the *existing* political adjustments of our Imperial Government, London can never offer to the aspiring spirits of the provinces. Annexation would open the same field to those who now fret and fume within the narrow spheres of colonial power and office. Besides rendering accessible the single high dignity now held by the nominee and representative of the Crown, new offices would be created, which would carry a favoured few to the seat of the central Government. Those who now rule or agitate the provinces, would expend their fire and energy as members of Congress, or as senators from their own State. Within the political life of those who brought about the union, Canada might be expected,

in her turn, to give a President to the vast Confederation; and what a prize to run for does this at present seem to a Canadian politician? But independent of this highest office, which few can reach, a thousand ways to wealth and influence would be open before them, at or through Washington, for which they now look in vain.

That cause is safe which can contrive, generation after generation, to enlist on its side the talent and ambition of rising men. A system which naturally stands in the way of, and opposes itself to, the highest strivings of all the highest talent of successive generations, is sure to become weaker as the power increases which the possessors of this talent can bring to bear against it.

We have given parliaments and assemblies to numerous colonies; and though the material interests they severally wield are for the most part puny as yet, in comparison with those which are directed by the British Parliament, they are hourly increasing in individual importance, and in a very few years will, taken together, equal all else which our Houses of Lords and Commons hold under their control. Could we, while time still amply remains, organise a central assemblage in which each of these colonies or parliaments should be represented, we should at once cement together, by a new bond, all the scattered elements of our power, and open up to the gifted and aspiring of the whole Empire a far wider career than even the Home Parliament now presents—one in which all who are fitted to rise would equally attain their level, whether born amid the snows of Canada and New Brunswick, beneath the fiery suns of India, in the wide Cape colonies, in Australasia, or in what we patriotically fancy our happier island homes. The sphere which Washington offers, though broad and bright in North American eyes, would dwindle in comparison with one on which the sun never sets, and in which the prizes of a large army, a magnificent navy, a

richly paid diplomacy, an Indian empire famed for wealth, and of a field of enterprise such as Roman dominion never presented, would all be before the soaring and adventurous spirits of the time.

There is also another way of looking at the same picture.

It is confessedly the boldest, most spirited, and most energetic of the families and neighbourhoods to which they belong, who have nerve enough to break asunder the ties that bind them to home, and to embark their destinies upon a new country. Why should the mother cast off for ever her wandering and most stirring child? Why prevent herself from ever benefiting by the energy, the experience, and the mental resources of her children or their offspring? It may be said, that we have never lacked talent enough for the wants of the country from among those who have remained at home; but we should at least thrive none the worse were we able, when emergencies arose, to take counsel with all the talents of the Empire, whether home or colonial born. Especially would the latter be precious in advising as to the affairs of the colonial provinces themselves. Thus the claim of the colonies to a wider field for their talents and ambition, and that of the mother country to the services of those who inherit her blood and partake of her native intellectual strength, point equally to a new imperial adjustment of legislative and administrative power.

Why is it that the sons of our rich men and of our men of rank are not met with among the founders of the new Anglo-Saxon dominions, which are springing up in so many quarters of the globe? Is it not that they have there no hope of attaining to the same position, honours, or social position as if they remained at home; that they fear to be cast off and forgotten; are almost certain that, for them and for their children, as soon as the British shores are forsaken, the only road to distinction is

through the clearing of the primeval forest, the petty squabbles of local and angry politics, or the narrow struggles of a provincial assembly? But open to all the same access to imperial honours—make them feel that wherever they go they remain still British, equal with the British-born they leave behind—and then, instead of lingering through an idle life at home, or vegetating on pensions and ill-earned sinecures, younger sons of rich or ancient houses would start to other lands, give to new climes the aid of their pure but stagnating blood, and revive and perpetuate, under new suns, the deeds and names of their forefathers.

But of how many obstacles, real or imaginary, to the results we have been contemplating, do the shadows rise up before us. Polemical squabbles convulse the land, rival religious sects contend for the mastery, class strives against class, and men's minds are blinded to the greatest good and glory of their country. While contending political parties struggle for place and power, the links which connect the several parts of the Empire are insensibly loosening and preparing to sever.

Could some pure patriot arise among us, greatly gifted, and stirred with the magnificent idea of giving to the British Constitution, and to this free constitutional empire, a great and permanent future, by grafting really, and as brother-and-sister branches, on the mother trunk the numerous provinces and colonies which now muster under the same broad flag—how might the English name and grandeur be preserved secure from all assaults, and English energy, civilisation, respect for law and order, and love for intellectual and material progress, be more widely spread, domiciled, and perpetuated over the habitable globe! Above all party triumphs, what glory would encircle such a statesman! An after-name might be his, greater even than that of a Wellington or a Washington.

But the hope is, I fear, a foolish one. So many old obstacles have gathered around every abuse, so many vested interests are associated with everything as it is at home, that one envies the legislators of this Capitol of Washington the uncleared lands for which their laws and constitutions are to be made; through which, though naturally dark and difficult, the axe readily hews out a straight and open way, and where, in the most settled regions, the trammels of the past hang still very lightly on the hands and feet of the improver.

CHAPTER XXVI.

Visit to Virginia.—City of Alexandria.—Natural advantages of the State of Virginia.—Its comparative position in the Union now, and at the period of the Revolution.—Supposed effect of slavery on its population, its annual produce, and its school instruction. — Acknowledged evils of slavery in Virginia.—Slave-breeding.—Annual value of this produce to the State.—Profit of human stock to the rearer.—It yields more to the State annually than all its tobacco and cotton together.—Free-coloured people a source of anxiety.—Idea of sending them out of the country.—Establishment of the Colonisation Society.—Republic of Liberia.—Coloured people shipped to it from the States.—Colonisation Society a failure.—Grants of State Legislature.—"Maryland in Africa."—Action of the State of Virginia.—Mr Webster's offer.—Mr Clay's plan for emancipation in Kentucky.—Laws against the free-coloured in Kentucky and Illinois.—Influence of Liberia in repressing the slave trade.—Recent action in Virginia.—Moral influence of the North over the condition of slavery in the South.—Prospects of the slave power in North America.—Increase of sugar culture in Louisiana.—Extension of manufactures in the southern States.—Employment of slave labour in the factories.—Its influence on the future condition of slavery in the States; and of our operatives at home.—Free-soil Germans in Western Virginia.—Influence of this class on the future state of slavery in the southern States.—Coast survey of the United States.—Smithsonian Institution at Washington.—Its founder and its objects.—Promotion of science by the general and State Governments.—Reserves of land for the purpose of State geological and mineralogical surveys.—Free evening lectures at the Smithsonian.—Female freedom in Washington.—Bales of domestics.—Huccum.—Speaking and doing for political capital.—Great noise about trifles.

Jan. 31.—I spent this forenoon in steaming a few miles down the Potomac, and in paying a visit to the town of

Alexandria in "Old Virginia." The day was fine, the river broad and beautiful, and the town of Alexandria well built and clean. But though in the "old dominion," it presented in its streets, houses, or public buildings, no marks of such antiquity as could carry one quietly back to other days, before the bustle and noise had come in, and the incessant novelties of these feverish times.

And yet Virginia is rich in subjects of reflection, and the contrast of its past and present condition is full of instruction.

When the Constitution of the United States was adopted, Virginia was the most powerful State in the Union. Its population was double that of the State of New York, its wealth greater, its political influence predominant. It has alone given to the Union five of the thirteen chief magistrates who have hitherto filled its presidential chair.

Virginia is also, with the exception of two or three of the newest States of the Union, the most extensive in area. It contains 70,000, while New York contains only 47,000 square miles. It enjoys a delightful climate, possesses a fertile soil, is rich in minerals and timber, has magnificent rivers descending from the Blue Ridge and the Alleghanies eastward to the Atlantic, and westward to the Ohio, and rivals in its harbours the safest and most capacious in the world.

Since the Union it has increased in wealth and population and power, but it is no longer the first in any of these respects. In all, it is now surpassed by each of the three States—New York, Philadelphia, and Ohio. For the last twenty years its population has been comparatively stationary; and while new towns have been springing up everywhere throughout the latter States, only on a few spots along its borders is this mark of progress visible in Virginia.

It is not to be overlooked, that something of the more

rapid progress of the three States I have mentioned, is to be ascribed to their position in the direct line between Europe and the north-western States, and to the tide of emigration and commerce which flows through them, enriching and increasing all interests as it rushes along. But the main and most really influential cause of the difference in the present relative position of Virginia, is ascribed to the existence of slavery, the gradual exhaustion of its virgin soils, and the consequent unprofitableness of slave-labour.

In proof of the evils ascribed to slavery by the committee of the New York State Legislature—"that it degrades labour, paralyses industry, represses enterprise, exhausts the soil, perpetuates ignorance, and impoverishes the people," it is stated by them—

First—That in 1790 the population of Virginia (748,000) was double that of New York State, (340,000;) while, in 1840, the population of New York State (2,500,000) was double that of Virginia.

Second—That in 1800 the population of Virginia was in the proportion of 11.9, and in New York of 11.7 persons per square mile, while in 1840 there were in the latter 49½, and in the former only 18.6 persons to the square mile.

Third—That the annual products of New York amounted in 1840 to the value of 79 dollars for each individual, while in Virginia they were estimated only at 62 dollars, and—

Fourth—That, in the primary schools of New York, there were 500,000 pupils, and in those of Virginia only 35,000; while of persons who could neither read nor write, there were less than 70,000 in New York, but upwards of 500,000 in Virginia.

These facts prove that in the one of these States, compared with the other, population has been restrained,

progress retarded, production lessened, and ignorance increased; and the differences are ascribed by the Legislative Committee of the State of New York to the natural tendencies, respectively, of slave labour and free.

I believe there are no people more sensible than the people of Virginia themselves, of the evils which the system of slavery imposes upon them. I travelled for some distance with a slave-holding farmer on the James's River, in Virginia, who owned a thousand acres, which he cultivated with the aid of fifty slaves: wheat was the principal article of produce which he sent to market, and he could barely make the ends of the year meet. This state of things is very much the same as that which prevailed on the banks of the Hudson River, in New York State, twenty-five years ago, before slavery was abolished, and labour ceased to be considered a disgrace to the white population.*

One of the most melancholy results of the system of slavery in Virginia, especially since slave-labour ceased to be profitable within the State itself, is the attention which proprietors have been induced to pay to the breeding and rearing of slaves, and to the regular sale of the human produce to the southern States, as a means of adding to their ordinary farming profits—as a branch, in fact, of common rural industry! One of the representatives to Congress from Virginia, in a pamphlet on the slavery question recently published, says, "Virginia has a slave population of near half a million, *whose value is chiefly dependent on southern demand.*" And the gentleman who states this fact is a defender of the system!

"In plain English," said Mr Stevens, one of the members for Pennsylvania, when commenting on this statement before the House — "In plain English, what does it mean? that Virginia is now fit to be the breeder,

* See *Ante*, p. 270.

not the employer of slaves—that her proud chivalry are compelled to turn slave-traders for a livelihood. Instead of attempting to renovate the soil, and by their own honest labour compelling the earth to yield her abundance — instead of seeking for the best breeds of cattle and horses to feed on her hills and valleys, and fertilise the land, the sons of the great State must devote their time to selecting and grooming the most lusty sires and the most fruitful wenches to supply the slave barracoons of the South! And the learned gentleman pathetically laments that the profits of this greatest traffic will be vastly lessened by the circumscription of slavery. This is his picture, not mine."

It seems a very cool thing to calculate the actual profits of such a branch of husbandry, and yet it is necessary to do so, that the reader may see the nature of the hold it is likely to take on the planter's mind.

The highest price obtained for Indian corn by the grower in Virginia may be stated at half a dollar a bushel; and the highest allowance of food to a grown slave at 16 bushels of this corn a-year. Suppose a slave to be reared and kept for twenty years with this large annual allowance, when full-grown, he would have consumed less than 300 bushels of corn, and would have cost for keep less than 150 dollars. His labour, meanwhile, would far more than pay for the little clothing he obtains, and other small expenses, and his master would sell him for 200 dollars or more. Thus he would obtain the highest price for his corn, work his land with the young slaves, and receive, besides, a premium of at least 50 dollars a-head, as interest upon his capital invested. Hence, if there be a ready market for slaves, this business will be a most profitable one to the individual breeder.

Again—the number of slaves in Virginia is diminishing. In 1830 it was 470,000, while in 1840 it was

only 450,000, and it is probably less now. The number sold, therefore, exceeds in a small degree (by 2000 a-year) the natural increase. Now the annual increase of the whole slave population is about 3 per cent, which, upon 450,000, is 13,500. And if only 1500 slaves a-year be sold beyond this natural increase, about 15,000 will every year go south to the slave-markets from the State of Virginia. As these will generally be sold in the prime of life, they may be reckoned worth at least 300 dollars a-head, which for the 15,000 gives 4,500,000 dollars as the price received for human stock exported every year from Virginia.

But Virginia produces yearly 50,000,000 lb. of tobacco, and 2,500,000 lb. of cotton, the value of which, at an average of 8½ cents a lb., is 4,375,000 dollars. That is to say, the slave-rearing husbandry brings in more money yearly to Virginia than all its tobacco and cotton do! Is it surprising, then, that the Virginians, both individually and as a State, should be anxious to enlarge and keep up the southern demand.

How profound a moral degradation is implied in such a means of industrial subsistence, carried out on so large a scale!

It is right, however, to mention, as having an important influence upon the public sentiment in regard to this slave-rearing husbandry, that by far the largest proportion of the slaves are found in eastern Virginia—east of the Blue Ridge, and are the property of less than half the white population of the State. The large income from this source, therefore, flows intothe pockets of this smaller half of the white inhabitants; and though these are bribed by their gains to defend the system more warmly, we may hope that the absence of self-interest in the majority of the State may by-and-by lead to the entire removal of the evil.

But, besides the actual slaves, the growing body of

free coloured people in the State of Virginia is a source of much anxiety to the white population. At the beginning of the present century, the number of this class of people in Virginia was only 10,000; it is now estimated at 60,000. Attempts have been made to repress this increase by discouraging the emancipation of the slaves, and forbidding such as are emancipated from remaining in the State without the special permission of the county courts.

These freed men are also most numerous in eastern Virginia; and as the whites in this region are diminishing, while the free blacks are increasing, it is not unnatural that the former should dread the influence of the latter upon the mind of the slaves, and should wish to keep down their numbers.

With a view to this end, the removal of the free coloured people from the continent of America altogether, and their settlement on the coast of Africa, has long been a favourite scheme of the Virginian planters. It was proposed as early as the close of last century, and was approved of by President Jefferson — if the scheme did not altogether originate with him. No practical steps were taken, however, to attain this object till 1817, when the American Colonisation Society was established at Washington, at a meeting presided over by Mr Clay.

The wish of the Society at first was to be allowed to send their free negroes to our colony of Sierra Leone, and, failing this, to establish a colony on the coast of Africa under the auspices of the United States, and with a guaranteed perpetual neutrality on the part of Great Britain. The republic of Liberia has been the result of this movement. To the land purchased by the agents of the States and of the Colonisation Society, free negroes have been sent from time to time, till the colony has been fairly established; and may now, it is hoped, be considered out of danger.

The persuasion of the members of this Society—if it is to be inferred from the speeches made at its last annual meeting, is, "that the black man—the free black man—can never mingle socially and politically with the white man as his equal in the same land," and that it is desirable, therefore, to send him to another region. Their efforts, however, are confined to "the colonisation of free people of colour, *with their own consent.*"

This scheme has never found much favour either in the north or in the south, and in revenge the speakers of the Society inveigh against both parties of their opponents as fanatics. The income of the Society has, for some years past, amounted to about 50,000 dollars, but during the thirty-three years it has been in existence, it has shipped for the coast of Africa only about 7000 coloured people. Even of these a great many have not been free people of colour, but slaves liberated on condition of their going to Liberia.*

The Society, therefore, has been a failure as regards its professed object of separating the white and free coloured races, by sending the latter to another country. The free coloured people increase at present in the States at the rate of 11,000 a-year, while the Society in thirty-three years has transported only 7000 in all, many of them slaves manumitted for the purpose. It is obvious, therefore, that the scheme is frowned upon by the people of colour themselves, that it finds no general favour even among the money-giving white people of the States, and that, in fact, it never can produce any sensible effect upon the relative numbers of the white and coloured population, or in any way diminish the natural increase of the latter. In the face of this plain result of experi-

* The report for 1850 gives 6653 as the total number transported up to the date of the report. The number sent off in 1850 was 422, and in 1849 it was 443, of whom "*three hundred and twenty-four* were liberated for the purpose of going to Liberia."

ence, it awakens a feeling of pity to read the exalted language in which the magnificent past doings and results and the future schemes of the Society are spoken of in the report, and in the published speeches delivered at the last annual meeting of the Society at Washington.

The Legislatures of several of the slave States have voted sums of money, from time to time, either in aid of the Colonisation Society, or for the purpose of purchasing land and establishing colonies of their own on the African coast. All these tracts of land, however, are now made over to the Republic of Liberia, with the exception of the colony of Cape Palmas, which belongs to and is supported by the Legislature and Colonisation Society of the State of Maryland. The Legislature of this State votes 10,000 dollars a-year in aid of this colony of "Maryland in Africa," and this sum, with other funds raised by subscription, are expended through a State Colonisation Society. It is probable that by-and-by this colony of Cape Palmas will also be ceded to the Liberian Republic.

The State of Virginia has recently taken positive measures towards freeing itself from the 60,000 free coloured people it possesses. A bill brought into the State Legislature during the last Session, (1850,) appropriates 50,000 dollars a-year for five years, to remove from the State, under the auspices of the American Colonisation Society, such free people of colour as may be willing to emigrate to Africa, and imposes on those who remain a tax of a dollar a-head, to be added to the same fund. It may be predicted, however, that even these measures will do little good in driving out the coloured people. They will be unwilling to go in such numbers as materially to lessen even the ordinary increase from natural causes.

It has surprised some that Mr Webster, in his speech in Congress on the slavery question in March last (1850,) has lent the full weight of his opinion, and the offer of his

influence, to the plan of exporting and colonising the free blacks. "If Virginia," he says, "and the south, see fit to adopt any proposition to relieve themselves from the free people of colour among them, or such as may be made free, they have my free consent that the Government shall pay them any sum out of the proceeds (of the sale of the territories ceded to the general Government, and which has already produced 80,000,000 of dollars) which may be adequate to the purpose." Whether, now he is in office, any measure to carry such an appropriation in Congress may be made, remains yet to be seen.*

It cannot be that statesmen really look for any relief of the supposed evil to this plan of deportation. The proposals must rather be made as temporary expedients, and for the purpose of political conciliation. So it must have been also with Mr Clay's plan for the gradual abolition of slavery in Kentucky, that all born after 1860 should be free when they reached the age of twenty-five, and that they should then be apprenticed for three years, to raise a sum sufficient to transport them to a colony, to be provided for the purpose. Who can foresee what is to be the state of the Union itself, or the political position of this constantly increasing body of coloured people, in the year 1888, when the first of these freed slaves would be in a condition to be expatriated?

There are now in the Union about 3,300,000 slaves, and 500,000 free coloured people. If these increase at the present ratio of 3, or even 2½ per cent per annum, they will amount respectively, in 1890, to 1,250,000 of free coloured, and to upwards of 7,000,000 of slaves! The new constitutions adopted in Kentucky and Illinois forbid the immigration and settlement of free people of colour in these States, and order the expulsion of such

* In the present Congress (1851) Mr Clay has proposed the establishment of a line of Government emigration steamers to the coast of Africa to promote the emigration of free blacks.

as are made free. But when numbers multiply so greatly, what law, unless it be that another St Bartholomew shall be enacted, will prevent these numbers from spreading over the land?

Two good results, however—the one immediate and the other more remote—will be promoted by the plan now successfully in operation of colonising the Liberian coast. It will repress—indeed, is already much repressing—the slave traffic, by lessening the extent of coast under the dominion of native princes who are inclined to carry it on, and by exercising a salutary influence over the African tribes, among whom the practice of kidnapping and selling their fellow-countrymen has hitherto prevailed. It will also promote the introduction of Christianity, and of the arts of civilised life, among the people of Central Africa. The more Liberia flourishes, the more rapidly and powerfully will its influence be exercised in favour of both these ends. Had the founders of the Colonisation Society established it, or did its present supporters uphold it with a professed view to these objects as their *chief* end, instead of merely as a remote, possible, and incidental consequence,* few would have ventured to speak of them otherwise than in terms of commendation. But the expatriation of men from the land in which they were born, under the plea that they have no right of home on American soil, is so unjust as to awaken at the outset feelings of distrust and dislike against the plans of those who urge it. The plea itself, also, comes so inconsistently from a race which is itself a usurper of its American homes—a vast majority of which adopted these homes only after the Africans had already been long resident in the land—and which, like the Celtiberian in Mexico, is, in opinion of some physiologists,

* In a memorial to Congress, two weeks after its formation, the Society says, "If the experiment, in its *remote* consequences, should ultimately tend to the diffusion," &c.

itself destined only to a brief continuance on the American continent.*

The question of a dissolution of the Union connects itself, also, with the condition of slavery in the United States, in another point of view, which is not without interest to those who concern themselves about the future condition of the coloured race in the southern States. So long as the north and south are connected together under one Government and one general Legisture, the moral influence of the free States, as well as their weight in Congress, must exercise a controlling and repressing influence over the slave power, and secure a greater regard to humanity in the treatment of the coloured population. Were it set free from such control by a dissolution of the Union, the opposition of interests and feeling which would naturally arise between the north and the south—then forming separate nations—

* A convention has recently been held at Richmond, in Virginia, on the subject of the "expulsion of the free negroes," in which these people were declared to be "adverse in feeling, adverse in sentiment, and adverse in interest to every community in which they are found; not to be citizens; to have none of the rights of citizens; not to be an integral part of the community; to be inducing a disease which is eating into the very bowels of the body politic, and to be increasing in the State to an alarming extent." Among the practical conclusions to which this convention arrived, were, *first*, That no persons emancipated in the State should be entitled to their freedom, unless the emancipator should first have provided for the removal of the freed from the United States, or for the support of such of them (the aged) as the Legislature might allow to remain in the State. *Second*, That, in future, no will should be registered by which any slaves were declared free.

It may be more surprising to some, as indicating the mental condition and mistaken sincerity of the people of the southern States, to learn that, in November last, (1850,) the Governor of South Carolina, in his annual address to the Legislature, after adverting to the doom then appearing to impend upon the civil institutions of the south, recommended "a day of fasting and prayer, to invoke God's protection and guidance in this our day of trouble and affliction, that he would graciously vouchsafe to enlighten the minds of our federal rulers, the north and its citizens, and direct them in the way of truth, of reason, and of justice!"

would impel the latter to more stringent and repressive measures. And human nature is so very extreme in its tendencies, when influenced by avarice, by fear, or by external reproach, that it is impossible to say what additional hardships the slave population might, in consequence, be doomed to undergo.

The desirableness of retaining all such moral control which may be attainable, will appear when we regard the probabilities now opening up of slavery, in the southern States of North America, attaining an extent and power beyond anything it has yet possessed.

It has been the growing demand for cotton, and the profit of cultivating it, that, since the invention of the cotton gin in 1793, has most of all strengthened the fetters of the slave, and multiplied his numbers six-fold. The increase of sugar-culture in Louisiana and Texas, by providing another outlet for the profitable employment of slave labour in a new and almost boundless field, promises to give a second impulse to the multiplication of the race on this Continent, similar to that produced by the culture of cotton.

In Louisiana there were of sugar-estates, and of slaves employed in the cultivation of sugar, in—

	With horse-power.	With steam-power.	Total.	Slaves employed.
1844-5, .	354	480	762	63,000
1849-50, .	671	865	1536	126,000

The cultivation of sugar, therefore, is rapidly increasing—a proof that, with the aid of the duty imposed upon foreign sugar in the States, these countries can now compete profitably with Cuba and the Brazils. Much more, therefore, when the slave-trade to these latter countries shall come to be abolished, and the expense of cultivation thereby raised, will they be able to strive successfully against them for the supply of the whole United States market. And if we consider that, into this latter market, raw sugar to the value of about 9,000,000 of dollars is

now annually imported from Spanish and Brazilian ports, we shall be able to form an idea of the very great development of which this branch of culture, in the southern States, is still susceptible.

In the great increase of slaves employed in the sugar culture in this one State of Louisiana—from 63,000 to 126,000 in five years—we see the direction taken by the slaves from the more eastern States, and we understand more clearly the meaning of Mr Meade, when he said, that "Virginia had a slave population of half a million, whose value was chiefly dependent upon southern demand." Were the slaves of this and other States sold bodily, so to speak, to the south, there would be a hope of clearing State after State of the severe infliction; but when only the increase is sold, Virginia is to Louisiana and Texas what Africa is to Cuba and Brazil; and the more the African traffic is put down by England, the more profitable will the internal slave-trade become to southern America!*

There is another aspect of this question which awakens gloomy apprehensions as to the future of the American slave. The introduction of the cotton manufacture into the slave States—Virginia, Kentucky, North and South Carolina, Georgia, Tennessee, and Mississippi—in which there are some hundreds of factories, consuming already from 300,000 to 400,000 bales of cotton a-year—has brought a new use of his slaves within the reach of the southern planter. The same power which compels them to toil in gangs under a burning sun, will constrain them to waste life in the factories, if it can be done profitably to the master. The great difficulty of the manufacturers in the New England States, is the question of labour—the scarcity of work-people, the high wages they demand,

* In the whole Union, during the last ten years, the slaves have increased by 808,000, or 80,000 a-year. In 1860 they will number about 4,500,000.

and the delicacy required to manage them. In the south these difficulties vanish. Slave labour is easily obtained, and the slave obeys as mechanically as the machine he superintends. A great and rapid extension of the factory system is therefore looked for in the south, and many predict that the manufacturers of the eastern States will sink before them.

But whether the latter result follow or not, the prospect is anything but cheering to the friends of free labour. If to the cotton-culture—hitherto the great slave-multiplier—be added that of sugar, as a profitable employment, and to both the use of slaves in cotton and other factories, it cannot be doubted that a new and great stimulus will be given to the breeding and traffic in slaves, and a stronger attachment created towards those domestic institutions by which slavery is established and made legal.

And if in free England the factory system has been productive of so many evils, physical, moral, and social, who shall say to what new forms of oppression and misery it may give rise in vast workshops peopled by human beings who have no civil rights, and who are superintended by others whose immediate profit may be the greatest when their sufferings are rendered the most unbearable?

In the preceding chapter, I have spoken of the direct influence—political, religious, and educational—which the institutions of the United States are destined to exercise upon our own, and of the gradual assimilation which, should peace and progress continue among them, may be expected to take place between their institutions and ours.

But this rapid extension of the cotton manufacture in the southern States, and the employment of slave labour in their factories, besides the influence it is likely to have upon the future condition of the slaves and of the slave

question in the United States, can scarcely fail to affect in a marked manner the future comfort and condition of our home manufacturing population. If the labour of coloured slaves, so employed, really prove cheaper than that of free white men, then either our manufactures must decline and decrease, or the condition and emoluments of our workmen must be gradually reduced to the level of those of the slave operatives of the American factories. The possibility of such a result is melancholy and disheartening, at a time when so many are anxious rather to improve and elevate than further to depress our labouring people.

But we have, as an encouragement, the assertion made by many, that free labour, even in equal circumstances, is cheaper than slave labour. How much more ought it to be so, when the free labourers are white men of English blood, enlightened by some measure of education, and assisted by all the aids of a constantly advancing mechanical skill? Though our home property may not ameliorate the condition of the unhappy chattels who are destined to labour in the factories of the southern States, we may, nevertheless, still hope that *their* condition, whatever it be, will not materially depress that of any class of labourers in our own more favoured country.

In any event, whether they do or do not come into direct competition with our home labourers, it cannot be a matter of indifference to us, either on the score of interest or of humanity, that the actual condition of the slave population of the United States should be sustained and ameliorated, rather than still further or for a longer period depressed; and if the maintaining of the existing Union will promote that end, we ought to wish and work for its maintenance. It is true that, supposing the Union indefinitely perpetuated, the additional encouragements to slavery presented by the sugar-traffic and by the

factory system would not be removed, nor could northern intelligence and energy be prevented from lending itself to the extension of these newer branches of industry, through the more abundant and obedient labour of the south. Still the public opinion of the northern States, and the annual discussions and legislation of Congress, would operate as powerful salutary restraints, and would check the evils of a bad system as much, probably, as any other we can now contemplate.

There is one interesting and encouraging circumstance in connection with this subject of slavery, however, to which I advert with the greater pleasure, as it serves to illustrate, at the same time, the relations which geological structure bears to agricultural capabilities, and to the social state. In Pennsylvania, as I have already observed, there are many Germans. These long ago settled themselves on the wheat-growing lands in Chester, and the adjoining counties along the western slopes of the Blue Ridge in that State. Constantly receiving accessions, both by natural increase and by yearly immigration, they have spread themselves extensively down the same great valley towards the south-west.

The grain country occupied by these settlers forms a sloping valley of mixed limestone and clay rocks—the Trenton limestone, lower Silurian, and the overlying Utica slates—which stretches in a south-west direction through Pennsylvania, Maryland, and Virginia, and, still farther south, behind the Carolinas, into Tennessee. Situated between opposing ridges of the Alleghanies, or rather between the Blue Ridge and the Alleghanies proper, this long valley is somewhat difficult of access from certain parts of the Atlantic coast; but the Germans having first settled upon it, in the more accessible latitude of Philadelphia, became familiar with and attached to the soil. And, as is so often the case in agricultural communities, in regard to soils they know and are skilled

in tilling, they have gradually extended themselves along the valley southwards into Virginia, carrying their habits, their wheat-culture, and their love of industry and of free labour, along with them. Thus they form, behind the slave-holders of Maryland and Virginia, and between Kentucky and the Carolinas, a growing band of wheat-raising, generally free-soil-preferring people, whose influence will not fail to operate beneficially on the future fate of the slave population of the States in which they reside. The political power, which formerly was retained exclusively by the tobacco-growing flat-lands of the tide-water region, will now begin to be shared with the occupiers of the wheat-growing limestone zone of the interior mountain-slopes. It would, in fact, have already left Eastern Virginia, since the whites, to the west of the mountains, are now much more numerous than on the eastern side, were it not that, in the elections in this State, slave property is represented, and that the number of members sent by the eastern counties to the Legislature is determined by the number of slaves, as well as that of white men, they severally contain.

There are already at Washington many public institutions, which the stranger will visit with pleasure. Among others, I had much gratification in visiting, with Dr Henry, the Office of Weights and Measures—where accurate sets of both, and of beautifully executed and durable balances, were preparing for each State of the Union—and the Office of the Coast Survey, where the latest methods were in operation for copying, in electrotype, the large maps, plans, and sketches connected with this most important work. It is a matter of doubt whether the State ought to be more congratulated upon having so well begun the great undertaking of an accurate coast survey, or upon having been enabled to place it under the able direction of so capable a head as Dr Bache.

But of all the public institutions at Washington, the Smithsonian is that which ought most to interest an Englishman. Founded by an Englishman, for the "Increase and Diffusion of Knowledge among Men," it promises to become one of the most distinguished among the numerous scientific institutions of the United States, and to contribute very much to the future scientific reputation of North America.

Fondly attached to experimental science, and known to many, both of the past and present generation, in England, for his theoretical knowledge and practical skill in the department of chemistry, Mr Smithson, remotely connected with the house of Percy, and emulous of its fame, believed that he should at once confer the largest benefits upon science, and obtain the most lasting reputation to himself, by leaving his fortune to the United States of America, in trust, to found an institution at Washington, bearing his own name, and which should have for its objects "the increase and diffusion of knowledge among men." This trust was accepted by the United States; and an act of Congress was passed, in August 1846, constituting certain parties a corporation, under the name of the "*Smithsonian Institution, for the Increase and Diffusion of Knowledge among Men.*"

The amount of the bequest was upwards of £100,000, (515,000 dollars.) After defraying the expense of a magnificent building, in the Norman style of the twelfth century, which is now nearly completed, this sum, by the accumulation of interest, will still have increased to 660,000 dollars, yielding an annual income of 40,000 dollars. Of this income, one-half, by act of Congress, is to be expended in the gradual formation of a library, a museum, and a gallery of art; the other half in the increase and diffusion of knowledge, by means of original researches, publications, and lectures.

An able exposition, in brief detail, has been drawn up by Dr Henry, of the way in which knowledge is to be *increased*, by offering rewards for memoirs containing new truths, and by setting aside sums of money for researches, by specified parties, upon specific subjects; and *diffused*—generally, by means of periodical reports on the progress of science, like those begun twenty years ago by the British Association, the publication of popular and useful treatises—and, locally, by lectures in the Institution during the session of Congress. It will no doubt be left to Dr Henry, as secretary of the Institution, to execute the plan he has so clearly sketched, and so far ably carried forward. For the sake of the American mind, it is to be desired that the changes so often seen in the bureaus of the several departments of State may not intrude themselves also into the retreats of science; and that, as the founder of this Institution has so emphatically illustrated the principle, "that science is of no country," so, by gifting it with permanent as well as able officers, should the successive holders of high political dignity show that in America "science is of no party."

So far the encouragement given to positive and experimental science by the general Government, as well as by the Legislatures of the several States, has been exceedingly creditable to all, and has been evidently dictated by an enlightened desire to develop, as early as possible, the boundless natural resources of the broad regions they govern. The States, as I have already mentioned, have nearly all employed scientific men to make geological and other surveys, more or less complete, and the general Government has done the same for the territories. While I was at Washington, Mr Douglas, one of the senators from Illinois, had a bill before the House to make provision for more complete surveys of this kind, by granting to each State of the

Union in which the public lands are situated, "a quantity of land equal to a township in each land district in each of said States, to aid in defraying the expenses of a scientific exploration and geological survey of said States." The passage of such a bill indicates not only the existence of a desire to discover what the country contains, but an appreciation of the objects of science, and of its economical value in relation to the comforts of life, which is not in all, even of our European, communities to be met with. Had such a grant as this been made at an earlier period, the survey of Pennsylvania would long ago have been before the public, and those of other States would have been completed.

There are, in the numerous public offices in Washington, some thousands, it is said, of young men, who receive salaries too small to admit of themselves and their families partaking of any evening entertainment for which money is to be paid. To this large class the gratuitous lectures in the Smithsonian Institute, delivered by persons most eminent in their several departments, will prove a great moral as well as intellectual boon. I had the pleasure of attending some of these lectures during my brief stay in the city, and overflowing audiences of twelve to fifteen hundred people showed how much interest they were already exciting.

Among old European acquaintances, I here met with Mr Espy, so well known for his theory of storms. He was engaged in the Smithsonian buildings, making experimental researches in connection with his theory, for which the necessary funds had been furnished by the general Government. To my namesake and old correspondent, Professor Walter R. Johnson, formerly of the Franklin Institute of Philadelphia, and well known in Europe for his extensive researches, economical and chemical, upon American iron and American coal, I was also indebted for kind attentions. It was my

misfortune to be at Washington at a time when the duties of the survey had called away Dr Bache, one of the few ornaments of American science whom I had previously met in England.

Curious words and sayings are heard or met with in every new State one goes to, however limited the society one may mix with. The saying which has stuck in my memory as the most remarkable of all I heard in Washington, was one attributed to a lady from the Green Isle. The amiable but most patriotic wife of one of my Washington friends spoke to me of the family of the Dublin patriot, Mitchell, as being resident in Washington, where one of the boys had obtained a situation in a Government office. Of the ladies she spoke in the highest terms—as who would not of Irish ladies?—adding that they were delighted with the United States, and that they declared "they had never known what liberty was till they came to Washington!" My female informant, who *did* know Washington, brought the story down upon me in proof of a previous assertion as to the enslaved condition—of us poor Britishers — on this side the Atlantic. Such of my readers as know Dublin may imagine what kind of liberty these ladies must now enjoy in Washington.

But, in truth, these ladies might very innocently use this expression, not employing it in a political, but in a social meaning—two meanings, however, which neither they nor their hearers might know or care to distinguish. It is certain that females enjoy much more freedom of action, usurp a greater degree of independence, than is either usual or considered correct in this country. This is so familiar to every one, has its origin so much in the want of early restraint to which, as children, they are brought up, and leads, it is said, in large cities to so many evil consequences, that we may sincerely hope that, if any social assimilation take place between the two countries, it may bring them nearer to us in

respect of the "liberty of women," rather than cause our manners to approach any nearer to theirs.

Among words, I was rather puzzled on reading a list of articles, drawn up by the Colonisation Society, for the assistance of emigrants to Liberia, to find among other notions "a bale or two of domestics," set down as desirable portions of a complete outfit. With us the word is usually employed as an abbreviation for "domestic servants;" but, in this land of helps and niggers, it is a contraction for "domestic manufactures," and, as the dictionaries say, means "cotton goods of American manufacture."

But a negro abbreviation, common on the Potomac, will please etymologists more than this. "Huccum," says the negro, when you tell him something has happened—meaning "how did it come?" "how did it happen?" This is about as good in its way as the "Do tell" of New England mentioned in a preceding chapter.

Among the singularities of this country, not to be observed in Washington merely, are the methods adopted by party-men and party-organs to keep themselves before their friends and the public—to make political capital out of everything. General Cass proposes to discontinue diplomatic relations with Austria, and fifty members of Congress take the occasion to make ferocious Bunkum speeches, which can lead to no possible good for the poor Hungarians. Two petty officials, British and American, have a personal quarrel at Lima, and forthwith the latter figures before the whole Union as the defender of national honour in the person of his little insulted wife, and realises an immense political fortune. A squabble occurs on the Mosquito Shore, and forthwith, if the world is not to be set on fire, war must be declared with Great Britain at the very least! An Englishman is amazed at all this excitability and useless waste of

powder upon trifles such as these; while an American coming to England is equally surprised that little or no notice is taken of matters so small in our home journals. We are content to leave such things to the official parties, within whose department they properly come, satisfied that the national honour is safe in their keeping, whatever party is in power. We would even be content to give up all ordinary points in dispute with our American cousins, as a nurse does to a noisy child, without any fear that his after-crowing would in any degree weaken her authority where matters of moment were concerned.

CHAPTER XXVII.

New York.—Its rapid growth.—Built by Europe rather than by America.—Interesting physiological problem.—Comparative growth of New York, Glasgow, and Birmingham.—Inferences as to native-born energy.—Utility of such comparisons.—Modesty of the New York journalists.—American notions of American steamers and American mechanics.—Collins' line.—British workshops in American cities.—"Bunkum" of the *Illustrated London News*.—Predicted downfall of England by the rise of the United States.—American Institute.—Exhibition of 1851.—Mr Pell's orchard and experiments.—Free-school system in New York.—Schools and colleges in the city.—Misery and ignorance notwithstanding.—Practical difficulties of the free-school system.—Universities in the State of New York.—They report to the Board of Regents.—The same Board inspects the academies.—Appendix to the Report of the Board of Regents.—Hot springs of Washitta.—Blue berries on the Adirondac.—Coal is crystallised petroleum.—Source of the saline impregnations of salt springs.—Staten Island, its soil and its farmers.—House-removing waggon.—Sunday travelling in New England.—General stoppage of railway trains and steamboats on the Sabbath-day.—Boston.—Lectures at the Lowell Institute.—Benefits to the rural community of this State from a rotation of Legislative office.—Revere house and public hotels.—Unsociableness at table.—Prevalence of diseases of the digestive organs in the United States.—Its influence upon the temperament.—Causes of digestive derangements.—Protestant Episcopal churches.—Changes in the English liturgy made by the American Episcopal Church.—Omission of the absolution of the sick, and the Athanasian creed.—Changes in the Articles.—Churches in Boston.—Numbers of each sect in the city and in the State.—Predominance of the Congregationalists.—Number of Unitarian congregations.—Change of the Puritan "Forefather" churches to Unitarianism.—This easily understood.—Religious progression among ourselves; in the Congregational body and in the Church of England.—Discipline of the Presbyterian churches.—King's Chapel in Boston.—Uni-

tarian liturgy.—Universalism, its extent in the States.—Its characteristic feature and large charity.—Alleged polygamy among the Mormons.—Freedom of speech on religious subjects.—Mr Colman's answer.—Number of Roman Catholics in Massachusetts.—Strength of the Episcopal Methodists.—Comparative strength of Romanism in Great Britain and in the United States.—Alleged greater harmony of religious sects in the States.—Is the consequence of greater civil and political equality.

NEW YORK, *5th Feb.*—I returned yesterday from Washington to New York, a journey by railway of about fifteen hours. There are many objects of attraction which a large city like this possesses in common with large European cities, which the stranger likes to visit, but which it would be tiresome to describe. Fashionable quarters, centres of mercantile transactions, and lines of crowded docks and wharves, are to be seen in London, Liverpool, or Glasgow, of pretension and extent at least equal to anything this commercial emporium can show. The street called Broadway—Mr Cooper rebukes Englishmen for speaking of it as *the* Broadway—is unequalled, I believe, in Great Britain, for united breadth and length in a straight line. In these respects it reminded me of the Nevski Prospect in St Petersburg, though far inferior to it in beauty, as it is also to many streets in Great Britain, to which persons of taste would give a preference.

It is the sudden growth of all its streets and population, and wealth and commerce, which forms the boast and pride of New York, and gives it the greatest interest to a stranger. In 1790 it had a population of only 33,000, it contains now nearly 400,000.

This increase is very remarkable, and the study of it suggests to the mind a very interesting social and physiological problem. The rise of the city is a source of just gratification and congratulation to the inhabitants, both of the town itself and of the State of New York. But the problem is, whether it be really a just subject of pride or

boast to the native population of the State? As the Atlantic port of a growing interior country of boundless extent, New York has certainly attracted many native-born Americans from the interior of the State and from New England to settle within its bounds for the purposes of traffic, but it has drawn its main increase from this side of the Atlantic. Every manufacturing district in Europe, and every large commercial port, has sent its agencies and branch establishments with similar trading objects, so that, during these sixty years, New York may be said to have been built up by Europe rather than by the exertions of America herself.

This fact becomes more striking, when we are informed that, at the census of 1845, two-fifths (about 150,000) of the whole population were foreigners born, and that, with their children, these formed a considerable majority of the population. Were we to go back to the grand-children, how many persons of what may be called real American blood would remain?

In regard to the native energy, therefore, of American-born, who are more than three generations removed from Europe, the growth of New York and of similar commercial cities proves nothing. They present interesting and remarkable social spectacles, but they do not establish, as many hastily suppose, the existence of great energy in the native race. Such energy may exist and abide in the people,—or it may be true, as Dr Knox and other physiologists assert, that the Anglo-Saxon race will and does degenerate in North America; that it cannot exist, in fact, beyond its natural region, without constant accessions of new blood. The growth of New York, a city only seventy years old, proves nothing on the general subject. It is a testimony to the energy of its actual inhabitants, but nothing more.

The growth of cities in old or circumscribed countries is more decisive on such a point as this. Liverpool, or

Birmingham, or Manchester, or Glasgow, the recent results of home enterprise, are more true representatives of the energy of the people of Great Britain than any of these new American cities are of the native vigour of what may be regarded as nationalised or acclimatised American blood.

Liverpool in many respects resembles New York as a great shipping port—a seat of commerce as well as of manufactures. We might compare the growth of these two cities, therefore, during the last half century, and very fairly contrast them with each other.

But Glasgow is a more thoroughly home town. It has less of that foreign connection which is likely to bring foreigners born to settle in it than Liverpool. Its mercantile houses have sent out countless agents, and established branches in many American, Asiatic, and European ports, but it has received little foreign blood among its citizens in return. It has done much to aid the progress of other mercantile cities, but it owes its own greatness to the native-born people among whom it has sprung up. I prefer, therefore, to compare the city of New York with that of Glasgow.

Now, the progress in population of these two cities during the last fifty years is represented by the following decennial returns:—

	1800-1.	1820-1.	1830-1.	1840-1.	1845.	1850.
Glasgow,	77,000	147,043	202,426	282,134	—	367,800
New York,	60,489	123,706	203,007	312,710	371,102	?

These numbers show that, without any of the advantages of the enormous transit-trade which may be said to have made New York, Glasgow, in the increase of its population, has in a remarkable degree kept pace with New York. During the first thirty years of the century, New York barely gained upon it the original difference of 17,000 souls. During the last twenty, its comparative

progress has been more rapid, and it probably exceeds Glasgow now by 50,000 inhabitants at least.

But then two-fifths of the New York population are foreigners born, and they and their families make up more than half the inhabitants. Both cities, it is true, have been almost equally indebted to immigration, but—except the low Irish who have been drifted into both cities, and who are an incubus rather than an aid, and far from being an element of progress—Glasgow is peopled wholly by native-born Scotch, and is thus the work of the people of the land. This city, therefore, may be regarded as a true testimony to the energy, enterprise, and perseverance of the people who inhabit the western Lowlands of Scotland. It is far more wonderful, as the result of half a century of exclusively home exertion, than the rapid rise of New York is, or than that of any other American city in which I have been.

The growth of the inland city of Birmingham and its suburbs is not less an undoubted illustration of native energy. Since the beginning of the century its progress has been as follows:—

1801.	1811.	1821.	1831.	1841.	1851.
73,670	85,755	100,722	146,986	220,00	300,000

It does not equal either Glasgow or New York in size, but its growth, in the centre of an inland district, through the instrumentality of native-born talent, working upon native mineral productions, leaves no doubt as to the physiological question of the inherent energy of the home-born who inhabit it.

I present these home pictures not with the view in any way of lessening the greatness, or the many just causes of admiration which the North American cities present. But such comparisons are, I think, fitted to operate usefully upon that class of minds which habitually magnifies and gilds, and sees unknown perfections in places

that are far distant. Many of our people at home are in the habit of hearing so much of the growth of American cities, that they are apt to forget that anything is doing among ourselves, and to leave their own country in consequence. Our Transatlantic cousins also, proud and delighted as they may well be with the increase of their towns, and with the filling up of their empty lands, make each other believe that they stand alone, not merely as a rapidly progressing, but as an innately energetic people. Ninety-nine out of every hundred of those who emigrate to America from the British Islands know, by personal observation, little or nothing of their native country, beyond the locality in which they have been brought up, and generally nothing more than the outside appearance of that. When they cross the Atlantic, everything is as new and wonderful to them as London or Birmingham would be if they had been taken to these cities instead, and they very soon agree with all they talk to in asserting, that what they have not seen does not exist, and "that there is nothing equal to this in the old country."

Even writers of travels have not been exempt from the same failing. Very few know their own country sufficiently well, before they begin to compare it with others. To be able to judge correctly of the United States, an Englishman must have seen a good deal of the progress of material development in the various seats of home industry, while, to do justice to our little island, our Transatlantic friends must come over and see us.

That the smallest possible degree of *additional* (!) modesty would not sit amiss even upon the New Yorkers themselves, to whom the growth of their towns is really due, will appear from the following paragraphs which fell into my hands during the few days of my stay in the city.

The *New York Herald*, of the 14th September 1849,

contained the following observations regarding California:—

"Such is the general character of the important intelligence just received from California—from that new and wonderful El Dorado, that *beau-ideal* of nationality, which has leaped into existence with the rapidity of electricity, on the shores of the Pacific, under the fostering care of this great and mighty mother of American republics. We fear nothing for California. That country is on the highway to prosperity, wealth, and greatness. The right description of human intelligence and of mental activity have gone in that direction, and those even who are already there, are more capable of constituting a prosperous, happy, and successful republic than are all the philosophers, statesmen, and great men of the Old World, rolled into one lump of vanity and imbecility!"

If anything I have said in the preceding pages might be likely to *rile* any of my Transatlantic readers, I hope they will think that we Britishers are abundantly paid back by this dignified set-down of the *Herald*.

The opinion in regard to Old-World wisdom, so energetically expressed in the above extract, is not unfrequently entertained among the younger and middle-aged people of this country. I had crossed the river from New York to Long Island, and was on my way to the Greenwood Cemetery—which will well repay the stranger's visit—when I fell into conversation with a gentleman walking in the same direction. He appeared to be well educated, spoke of the misery of people in Europe, being candid enough, even, to observe, that he believed the density of the population, and not the governments, were to blame for it, lauded the United States as the freest country in the world. "Except," said I, interrupting him, "the country I come from: we are just a little freer than you are, and perhaps you come next." This pull

up rather took him by surprise, but as I begged him to proceed, he dilated on the rights of labour, on the beneficent changes that would follow when true democratic principles were more widely diffused in the States, and wound up by maintaining, in its broadest sense, that the rights of property should not be allowed to stand in the way of what the majority of the people thought was for their good. "In my country," I said, "we consider it rather conceited in a man to be so *very* positive as to matters on which so many wise men hold, and have held, a different opinion. We think a man ought to hesitate and consider before he expresses himself so very decidedly on difficult subjects, as comparatively young men are in the habit of doing in this country." "On the contrary," he replied, "the conceit is all the other way, in fancying that these men of yours in Europe have settled everything, and that nobody is to be as wise as themselves." As we parted company, I thought he looked very like a gentleman, but spoke very like a Chartist.

As the Canada mail-steamer was going out to sea, towards the end of January, (1850,) at her usual speed when leaving harbour heavy-laden, a new American steamer called the Georgia, intended for the California trade, started along with and went ahead of the English boat. This they called beating the Canada *in a race*, and on the 26th, the following exquisite morsel appeared in the New York *Sun*:—

"The triumph of the Georgia in her little race with the British steamer Canada down our bay was nothing more than we have anticipated, from the moment the first American ocean-steamer was launched. The early failures of the Washington and Hermann were the imperfections of machinery incident to experiment, also to the greed for dollars which would almost sink them with freight. *It only required half the time the Britishers*

had taken to perfect their steamers, to make ours as superior as our packet-ships have long been confessed to be by Englishmen themselves. A dozen years hence, we shall beat English steamers so badly, that they will be as scarce in our waters, as mail or passenger carriers, as English packet-ships are now. We have no disposition to shout victory—for victory, when we come in competition with England, on land or sea, is what we always expect as a matter of course."

During my stay at New York, I visited the new steamers then building, for the New York or Collins' line. After being conducted over the Atlantic, then nearly finished, by the first officer, I observed on leaving, "Well, I hope you will beat us." "If I had said that," he answered, "I might have got credit for sincerity." "Oh," I said, by way of a Roland for his Oliver; "I *do* hope you may beat us, because I know we shall beat you again." It did not seem to have occurred to this gentleman, that an interest in the progress of steam navigation could be separated in any one's mind from that of national rivalry, or that of all our sea-going steamers from the same builders, the last built has been almost always the best. With all the plans and experience of the Cunard boats before them, and with English and Scotch workmen to do their bidding, it was discreditable to the New York builders, after bragging so much about what they were going to do, that the Washington and the Hermann did not at least equal the older boats of the Cunard line. It will also be somewhat discreditable to our boat-builders, who have not bragged, if the Collins line greatly, or for any length of time, surpass those which we shall build after the new boats have all begun to run, and their supposed improvements shall have been fairly tested.

The following, in the way of soft sawder, is not bad, though, in patriotic energy, it is far behind the *New*

York Sun. I copy it from the *Albany Mechanics' Journal*:—

"The mechanical skill of the country appears to be especially directed to the production of a rotary steam-engine, which shall supersede the reciprocating. Without going into an argument *pro* or *con*, upon the subject, we will merely observe, *that if ever the desired point is gained, it will be by an American mechanic. Almost every improvement and discovery in mechanics, in late years, is due to the ingenuity of* OUR *artisans;* and to them we shall look for the solution of this question, if soluble."—*Mechanics' Journal*, Albany, June 19th, 1847.

To appreciate the full force of what is said in regard to American mechanics and American mechanical skill, it is necessary to be aware of the kind of men with whom their workshops are filled. I went into some of the machine-shops where the materials for the new line of steamers were in process of manufacture, and I heard almost every workman talking with either an English or a Scottish tongue. I remarked this to my New York friend who accompanied me. "Yes," he observed, "but the head-man is an American." In a machine-shop the hands are at least as important as the head. "I have a clever Englishman in my workshop," said a wholesale hardware merchant of Philadelphia to me, "and if any English article is wanted that we have never made, I send for him, and ask him if he can have it made for me, and he has never failed me yet."

Workshops filled with British workmen are British workshops, on whichever side of the Atlantic they may be, and engines made in them are British engines; so that we, in reality, feel no jealousy at being beaten by ourselves. The Hudson against the Clyde is nothing more to us than the Mersey against the Clyde; and at present the home jealousy between these two rivers is very great. The idea of a national jealousy in the

matter will scarcely cross the mind of many on this side of the water.

Some of our own journals are not without a bit of American *bunkum* now and then, which, if not so intended, is yet fitted to encourage the worst tendencies of the American people. During my stay in New York, for example, an article from the *Illustrated London News*, headed "Signs of Decay," and written with anything but an honest English spirit, ran the round of the American papers, and was rejoicingly quoted from. In this article it was stated that "the growth of the United States was, in reality, the downfall of Great Britain," and that Australia "was rising daily upon our fall."

Great Britain to the United States is the standard by which, secretly or openly, all progress is tried. With the state of things in our island their own are compared. No anxiety is ever expressed about beating France or Germany in anything—it is England that is to be excelled. This is both creditable to them and gratifying to us.

But it is the tie of blood and tongue from which this springs, as much as from the desire to surpass that which is the most excellent. It is the same principle exactly which makes our *home-dissatisfied* see perfection only in North American soils and cities and institutions. They neither wish to migrate to any European country, nor to amend our institutions after Continental models. It is the fortunes of men of our own blood only that we think better than our own. But there are low feelings in all our breasts; and as a man may rise in the struggle of life, either by actually surpassing his competitor in merit, or by removing him out of the way, so, in this race of nations, the United States may obtain the lead among the Anglo-Saxon race, either by her own rise or by our fall. It is not be wondered at, therefore, that among 23,000,000 of people there should be some, even of the

journalists, who, in the eagerness to be first, make no distinction between the two modes of attaining the lead, and allow themselves, and encourage others, to rejoice as much and as openly at the idea of our fall as of their own industrial and meritorious rise. But surely a respectable journalist ought not to lend himself to the encouragement of feelings which, from the constitution of our nature, are of themselves so ready to rise up as to demand the most earnest repression in the minds of all.

For my own part, I must say, that all I know of England, and have seen of the United States, has led me to a totally different conclusion from that of the *Illustrated News*. I neither believe that there are as yet any signs of political decay in England, though social evils we have enough, nor that the rise of America is to prove in any way a harbinger of the fall of British power and greatness. I believe we have hitherto grown together. The same years of this century which saw New York and Philadelphia start forward with new vigour, saw a new life also spring up in Liverpool and Glasgow and Birmingham. The opening which the New World affords for the emigration of our poorer classes is a relief to us. The markets of Great Britain have not been straitened by the growth of the United States. On the contrary they have been enlarged, because, though proceeding, as they ought to do, in manufacturing at home, they do not produce enough of almost any manufactured article for their own consumption, and thus they are not on the whole lessening the demand for our manufactures. Then, as to mechanical discoveries and contrivances, they start with all the knowledge of our workshops, accumulated and perfected during hundreds of years, and the further improvements we daily make are daily imparted to them. But they must in future do the same to us; and if there be as good blood still left at home as we have sent to them, great benefits only must ensue to both, as

well as to mankind at large, by the multiplication of hands and heads engaged in the same work, and of workshops emulous of each other.

We cannot prevent jealousies, or repress evil exultations, on the part of individual men. But while I am satisfied that, in the present condition of Great Britain, there are no signs of decay, but marks of progress everywhere, and everywhere new energy awakening to meet new difficulties—which that very progress brings in succession to one or other of our complicated interests, so mutually dependent and interwoven—I am equally satisfied that with the progress and power of each country that of the other is intimately associated—associated not for evil, but for good—and that if we fall not out, and come to blows by the way, which *we* shall be slow to do, every rise of young America will give a new lift up to old England; while the more formed and settled character of British habits and institutions will steady a little, give ballast to, and insensibly bias somewhat the course of the noble States ship, which the crew, governing by numbers at least as much as by skill, are sometimes inclined to put recklessly before the wind, and to crowd with sail beyond what she is able to bear.

Feb. 8.—"The American Institute" is a society—established at New York, and supported in part by a grant from the Legislature—which occupies itself chiefly with the promotion of the arts and of agriculture. It holds an annual exhibition of arts and manufactures in the city, and these have of late years been very splendid, satisfactory to all parties, and useful to the State. To General Chandler, the secretary of this society, and to several of its members, I was indebted for much attention during my brief stay; and it was particularly gratifying to me to see with what warmth all, both in New York and in Albany, entered into the objects of the "London Exhibition of 1851," how anxious all were to take

advantage of the facilities it would afford for giving and acquiring practical information, how justly they spoke of the greatness and liberality of the idea, and how patriotically desirous they were that their own country should be well represented in the assembly of the nations.

Among others, I had the pleasure of making the acquaintance of Mr Pell, whose name I have already mentioned. This gentleman is known to fruit-growers as the owner of a famous orchard at Pelham farm, on the river Hudson, containing 20,000 apple-trees, chiefly of that highly prized Newton pippin, for which London alone affords an almost insatiable market.

I was much interested with the history which Mr Pell gave me of the chemico-physiological experiments he had for some years been making in his orchard, taking hundreds of trees at a time upon which to try a single experiment. One of these trials, as I have explained in the preceding volume, (Chapter VI.,) had been to ascertain if it was not possible to compel apple-trees to produce a good crop of fruit every year, instead of once in two years only, as is usually the case in Europe as well as in America. He found that by cleaning off the rough bark, pruning carefully, slitting the bark as high as the first branches, and digging-in lime around the roots in the autumn, he had a heavy crop the succeeding summer. By digging-in, the second autumn, stable manure around them, he had an equally heavy crop the second summer. The general result of his trials is, that a crop may, by such treatment, be secured every year; but he thinks the tree would not live so long a life. Still, if the flavour of the fruit be as good, and the expense of tending not too great, it would be easy to have a second set of trees coming forward, while the first grows old, as is the case in the peach orchards of New Jersey. There would be less cost in this also if Mr Pell's mode of procedure were adopted.

He cultivates the land among his trees—a strong, deep, sandy loam, in a gravelly subsoil, as if it were open—with every kind of crop except rye. In regard to this grain, I have already quoted his interesting remark, that "it is so very injurious that he believes three successive crops of it would destroy any orchard of less than twenty years old." Is there really, then, some special action exercised upon the soil by this species of grain?

The rapid growth of the city of New York has brought with it the two consequences which in our day appear to attend, though not always in equal degrees, the accumulation of great wealth, and of large masses of people in a limited space. Poverty, misery, destitution and ignorance, have grown with the growth of the city; but alongside of them also charity, sympathy with the poor, concern for the ignorant, the establishment of schools, hospitals, and houses of refuge. Before the common schools were taken so completely under the patronage of the State, a public school corporation in New York had established a constantly increasing number of schools in all parts of the city; and of the 190 common schools *all free* which now exist in it, about 120 are still under the charge of this venerable corporation.

The average attendance upon the free schools of New York in 1848 was 32,000, while 120,000 children in all had attended school for some period of the year. There is also a free academy, at which higher instruction, preparatory to the universities or colleges, is provided for all free from charge. Of colleges there are two in the city—the Columbia College, a Protestant Episcopal Institution, founded in 1754, which has 130 students, and a library of 17,000 volumes; and the University of New York, founded in 1831, which has 150 students, 4000 volumes of books in its library, and is, I believe, under Presbyterian direction. Two rival medical schools also exist, one of them connected with the University of

New York, reckoning together about 650 students; and two theological schools, one of which is Episcopalian, and the other Presbyterian.

As in other large and wealthy cities, however, all this apparatus does not overtake the ignorance and increasing destitution, especially of the families of the poorer immigrants. At the period of my visit it had been ascertained that there were in the city nearly 10,000 destitute children without homes, instruction, or known means of livelihood. Our own large cities can tell similar melancholy tales, and all the efforts, both of public and private benevolence, which abound equally in both countries, can scarcely hope to do more than merely assuage the misery to which the idleness and improvidence which flock into large towns will always give rise.*

One evil found to attend the free school system in the city of New York, is the frequent change of school and master made by the children. The source of a great deal of this is to be found in the disposition which prompted a girl, who was taken to the school of a sisterhood near Boston, and told she must call one of the ladies "Superior." "I acknowledge no superior," was her reply. Change of school is easy where there are no accounts to settle, and where the new master cannot refuse to receive a pupil unless his school is full. The maintenance of discipline under such a system must be very difficult, and to make thorough scholars must be infinitely more so.

The city of New York, I have said, contains two colleges. In the State there are eight colleges in all—three Episcopalian, one Baptist, one Roman Catholic, and three Presbyterian. The number of professors and students in those of each denomination are as follows. In the—

* The more recent journals state, that in New York there are "more than 20,000 people of all ages, who eat, drink, and sleep under ground, burrowing in the earth like so many animals." This is the Liverpool cellars over again.

	Professors or Instructors.		Students.
3 Episcopalian, there are, .	24	and	301
1 Baptist, ...	9	...	127
1 Roman Catholic, ...	16	...	110
3 Presbyterian, ...	34	...	589

The popular support and educational strength in the Universities rest chiefly with the Presbyterians, and after them with the Protestant Episcopalians.

Two new colleges are also projected at Rochester and Buffalo, but only the medical department of the former has yet come into operation.

All these colleges, with the exception of the Roman Catholic college of St John's, are bound to present an annual report of their condition as to funds, endowments, fees, pupils, tuition, class-books, &c., to a board called the Regents of the University, which has its headquarters at Albany, and are subject to visitation by the members of this Board. Three of the poorest receive grants from the State, of 3000 or 4000 dollars a-year. This Board of Regents has also under its supervision all the registered academies and grammar schools, 188 in number, among which the State divides annually, through these regents, according to the number of pupils taught in each, about 40,000 dollars. These academies are subject to visitation, and report annually to the Regents. The Board of Regents, out of all the materials thus obtained, presents a condensed annual report on the condition of all the colleges, medical schools, and academies to the Legislature, by which the report is printed and widely circulated.

Of medical schools there are five in the State, containing 34 professors and 744 students. Four of these receive grants of money from the State, and report to the Board of Regents.

To the members of this Board of Regents it had early occurred or been suggested, that their connection with

so many literary institutions and men of talent put them in a condition to benefit science, by the collection especially of meteorological data, which the publication of their annual reports gave them facilities for generally bringing before the country, and at little expense. This idea they have acted upon, and not only are the tabulated observations they now annually append to their report considered of great importance, but the records of interesting occasional phenomena observed by intelligent men in different parts of the State, which this appendix embraces, give it a peculiar value, even in a popular sense, which almost every reader is able to appreciate.*

Would it not be a help to intellectual progress among us, and to the most useful application of the educational means we possess, were annual reports from all our colleges also presented to the British Parliament, and published for the information of the country?

Before leaving New York, I crossed over to Staten Island, with the intention of making an agricultural examination of a large part of its surface. A piercing cold wind, however, and a thin flaky snow came on, which confined me to a range of a few miles only. The

* From a voluminous contribution upon various meteorological subjects, made to the appendix of the report for 1849, by a gentleman of Brooklyn, the following short extracts will interest or amuse the reader:—

1st. Speaking of the hot springs of the Washitta in the State of Arkansas, he mentions that "there is a water-insect that lives and sports in the hottest springs, (148° Fahr.) something larger than the wood-louse."

2d. "The forest on the White-faced peak of the Adirondack was burned to the ground in 1843, and the very soil, not more than twelve inches thick, calcined; and it is now covered with blueberry bushes in such profusion that 2000 bushels were picked there last season for Montreal market."

3d. After describing the burning wells of Kanhawha in north-western Virginia, in which, from a depth of 1500 feet, large quantities of combustible gas rise along with the brine, and are employed in boiling it down into salt, he adds, "The wells first sunk in this neighbourhood to the depth of 300 or 400 feet, yielded *petroleum*, (liquid coal,)

undulating upland, where I saw it, consisted of a yellowish or reddish sandy clay, bearing a natural forest of oak, hickory, gum, and beech, and an after-growth of poor scrubby red cedar. At a late meeting of the Farmers' Club of this island, it was unanimously resolved, "That under no circumstances was it expedient to plough deeper than six inches!" This will give an idea, if not of the state of farming, at least of the state of a tract of land which bears naturally a forest of thriving oak. Draining, subsoiling, and better manuring with the fish of the Sound and the refuse of New York, would soon change the appearance of the surface, and, I believe, the opinions of the cultivators as to the most profitable mode of ploughing.

On the highway in this island, I met a strongly built broad low truck drawn by two horses, and rolling along on very low broad wooden wheels. It was one of those carriages on which it is customary here to remove houses from place to place.

Boston, Monday 11th.—I left New York on Saturday, spent the Sunday at Newhaven, and came in here

which was abundant. This petroleum is carburetted hydrogen *condensed*, and mineral coal is petroleum *crystallised*."

4th. A stranger fancy is that which he propounds as to the origin of the saline impregnation in the salt springs at Onondaga in New York State, and in the great salt lake of Utah in Central America. After describing that from each locality three streams take their rise, running in different directions to different seas, he adds, "Here are three bodies of water through which, and the vapour arising from them respectively, the saline contributions are conveyed by *the electric energies* of the ocean, and are impelled and conducted to a focus, and to which the saline properties are borne with the force of every struggle of the mighty deep, and the storms of lightning which labour among the clouds at this trio of fountains flowing from one combined centre!"

Such a passage as this seems to carry one back again to the magniloquent days and reasonings of Paracelsus. But the reader must not judge of the appendix I have called so valuable from these two last bits of trash.

to-day. The question of Sunday travelling has been very extensively and warmly taken up in New England, and, had I wished, I could not have come from New York to Boston yesterday. There are now between 30 and 40 railroads on which no trains whatever are run during the Sabbath, not even for the conveyance of mails. In the New England States—Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, and Connecticut—there is not a single railroad that runs any regular trains on that day. In these States, the length of railroad open now exceeds 2000 miles. The same is true of most of the New York railways, which are upwards of 900 miles in length. Most of the steamboats also cease running on Sunday, and hence there are few parts of the country where it is possible for the idler or traveller to move to any distance from where he may happen to be on the Saturday night. If the New Englanders have fallen away from the respect which we still entertain for some of our old institutions, they certainly beat even Scotland now in the tenacity with which they cling and pay respect to the Sabbath.

I spent six weeks at Boston, having been engaged in giving a course of twelve lectures at the Lowell Institute, on the "Relations of science to agriculture." It was during the session of the Legislature, and many of the members availed themselves of the opportunity which the liberality of the founder of this institution afforded them of obtaining information upon a subject new to many, and interesting to nearly all the country representatives. The subject was the more well-timed, inasmuch as a bill was then before the Legislature of Massachusetts for the establishment of an agricultural college.

I have already alluded to the almost total change in the representatives sent to the Legislature at each succeeding election in the State of New York, and have

remarked on the prevailing sentiment in favour of a rotation of office. The same changes take place in Massachusetts; but I could see in this State an advantage in the system, when a friend of mine remarked to me "that the country farmers look upon it as a kind of going to college,"—they have so many opportunities of obtaining information during their stay in Boston. I could see, in the general desire after this advantage, also a reason why there should be a jealousy about giving office to a rich man to whom such opportunities were not so valuable, and another meaning, besides the most obvious and vulgar one, in the objection sometimes urged against a candidate for office, "that he does not require it." There can be no doubt that, whatever faults they may possess, the inhabitants of New England, and of Massachusetts especially, are a knowledge-loving people, and that a recollection of their desire for this knowledge might induce the traveller to put a more favourable construction upon some of their peculiarities, social and political, than he would at first be inclined to do.

I spent the first week in the Révére House, a large, well-provided, well-conducted, most excellent, and, considering the fare and accommodation, most economical hotel—which leaves nothing to be desired by those who like to be constantly in public, and where noises unavoidably prevail. I preferred, at the end of a week, however, to remove to a boarding-house, where I could live in greater quiet, avoid the constant recurrence of new faces, and not be condemned to witness the daily flight from table of nearly all around me before my own dinner was half consumed.

It is customary for persons in business to dine by contract at the public tables in these hotels, and hence one reason for the haste at meals so often commented on by travellers in the United States. They are not, as in our

hotels, travellers whom the stranger meets for the most part at the public dinner-tables, but persons in full occupation, to whom time is really valuable, who, being absent from their families, have no inducement to linger over their food; and, usually abstaining from wine, have none to linger at table after the substantials of the meal are over.

At the same time, it is certain that there is a gloomy unsociableness at these dinner-tables, which would gradually thaw and melt down in the atmosphere of an English, and would scarcely ever be observed in a Scottish dining-room, among men sitting side by side at the same table. At first, I used to think the ungracious silence was in some way a fault of mine, and it was not until I had experienced several repulses that I became satisfied of the general unwillingness to converse at table, and made up my mind to speak to no one who did not first address himself to me.

Whether this silence at table and rapidity at meals be a cause of indigestion, or a consequence of disease arising from other causes, it is certain that diseases of the digestive organs, and deaths from such diseases, are much more frequent in the United States than they are in Great Britain. This is very strikingly shown by the following numbers, which represent the average cases of disease and death from disease of the digestive organs in every thousand inhabitants in the two countries:—

	Diseases in 1000.	Deaths in 1000.
United States, . .	526	14
Great Britain, . .	95	$\frac{1}{2}$

More than one-half the population appear to be affected by such diseases in the United States, and less than one-tenth in Great Britain; and while fourteen out of every thousand die of such disease in North America, only one in two thousand actually dies of it in our island.

If half the population be subject to a disease which, more than almost any other, interferes with bodily comfort and equability of temperament—which creates a restlessness, and nervous irritability, that is scarcely to be laid asleep, —it must have a most powerful influence upon the habits and general character of the whole people. It must be mainly instrumental in producing the prevailing habits and tendencies by which the population is characterised.

The prevailing nervous temperament of the New Englanders is ascribed by some of my friends, in the country itself, to the peculiarly dry and searching qualities of the climate. If this temperament lead to choice of food and habits of eating which bring on indigestion, this latter disease will again react upon the temperament, and thus a confounding of cause and effect will take place, which makes it very difficult to decide which is the first or chief agent in producing the observed result.

I am very much inclined, however, to the opinion, that a great number of those who emigrate are already more or less affected by the disease in question, before they forsake their native homes. Privation, hard labour, anxiety of mind, too close confinement during opening manhood, and other causes, produce stomach diseases and nervous restlessness, which makes men move to more hopeful regions, or which, being transmitted to children, impel them to new homes. The anxieties which attend the change of life in the new country continue and prolong the excitement; so that, independent of all special climatic action, some generations of tolerable comfort must elapse before the family restlessness would be soothed down. But if, besides, in the nature of the climate and the general example of the people there be causes of new excitement, we may expect the disease to be indefinitely continued, and the temperament to become characteristic of the people, and a national distinction.

Sunday, 17*th*.—I went to Trinity Church, where service was well performed and a very good sermon preached, distinctly and impressively, by Bishop Eastburn. The congregation was very much like an English one. The only singularity that strikes you is, that sitting, kneeling, or standing, are indifferently adopted as the attitude during the prayers—the number of tall men who stand appearing singular, compared with the very few who generally practise this attitude in England.

There are thirteen Protestant Episcopal churches in Boston; and though the Bishop, and most of his clergy are untainted, yet there are one or two churches into which Tractarian doctrines and practices have been somewhat largely introduced.

The changes of the English Liturgy which have been introduced into the prayer-book of the American Episcopal Church are by no means numerous, but they are decided improvements in a simple and Protestant sense. Thus, after the Absolution, the terms of which have been objected to by many, the following prayer is introduced which the minister may, at his discretion, use instead.

"Almighty God, our heavenly Father, who of his great mercy hath promised forgiveness of sins to all those who with hearty repentance and true faith turn to him: Have mercy upon you, pardon and deliver you from your sins; confirm and strengthen you in all goodness, and bring you to everlasting life through Jesus Christ our Lord. Amen."

Then the *Gloria Patri*, instead of being repeated at the end of every psalm, is said or sung only once at the conclusion of the whole of the psalms in the morning or afternoon service; or, instead of the *Gloria Patri*, the *Gloria in Excelsis* may be used.

From the Apostles' Creed, the words "he descended into hell" may be omitted, or the words "he went into the place of departed spirits" used in their stead. Or

for the Apostles', may be substituted the Nicene Creed. In the prayer "for all conditions of men," the holy *church universal* is substituted for *catholic church*—a much plainer and more intelligible expression, where it is so usual for the Romish Church to appropriate the former title.

At the end of the Litany, the minister at his discretion may omit all from "O Christ hear us," to "We humbly beseech thee, O Father, &c." and, after the gospel, the Nicene Creed is omitted—one saying of either creed being considered sufficient in one service.

In the Baptismal Service, the parents are admitted as sponsors if desired, and the minister *may* omit the sign of the cross, and the declaration which accompanies it. At confirmation, the presence of god-fathers and god-mothers is dispensed with. In the marriage service, the introductory address is shortened by the omission of all about reasons and carnal appetites; and in putting on the ring, the man leaves out the little-comprehended passage, "With my body I thee worship." The declaration of the parties being now man and wife, and the blessing, concludes this service.

From the Visitation to the Sick, the semi or wholly Popish absolution is altogether omitted; and instead of the psalm, "In thee, O Lord, have I put my trust," ("In te, Domine, speravi,") "Out of the deep have I called to thee," ("De profundis") is introduced. Also from the Burial Service, certain verses of the 39th and 90th psalms are left out; and when standing over the grave, the word *deceased* is used instead of *dear* brother, and "*looking for the general Resurrection in the last day*, and the life of the world to come," instead of "*in sure and certain hope* of the Resurrection to eternal life," to which so many good men object. The form used at the churching of women is also considerably shortened.

From the Prayer Book are omitted altogether the

Athanasian Creed, the Commination, and the forms of prayer for the 5th of November, the 30th of January, the 29th of May, and the 20th of June; and in their stead, are introduced "A form of prayer for the visitation of prisoners," forms of prayer to be used in families, and selections of psalms to be used at the discretion of the minister instead of the psalms of the day.

In the Articles few alterations are made. From the VIII., the "Athanasian Creed" is omitted. The XXI., on general councils, is left out altogether. Of the homilies (Art. XXXV.) it is said, that they are received as an exposition of Christian doctrine; but their use is suspended till a revision has been made for clearing them of obsolete words and phrases and local references. In Art. XXXVI. it is declared, that all consecrations or ordinations made according to the book set forth by the general convention of the church in 1792 are valued; and in Art. XXXVII., that "the civil magistrate hath power over all men, as well clergy as laity, in all things temporal, but hath no authority in things purely spiritual;" and no notice is taken of the Bishop of Rome.

In Boston, with a population of 114,000, there are in all a hundred churches belonging to twelve different denominations; and in the whole State, with 900,000 inhabitants, 1557 places of worship. Among the various sects, the Congregationalists, as is generally the case in New England, are much the most numerous. The relative numbers of the congregations of these and the other sects, in Boston and in the State, will appear from the following list:—

	In Boston.	In the State.
Congregational (Trinitarian,)	16	455
do. Unitarian,	20	168
do. Doubtful,	2	2
Methodist, (Episcopal,)	9	296
Carry forward,	47	921

	In Boston.	In the State.
Brought forward,	47	921
Methodist, (Protesting,)	0	7
do.	0	45
Baptists,	14	237
do., (Free-will,)	2	12
Christians, (Unitarian Baptists,)	1	39
Universalists,	8	147
Episcopalian, (Protestant,)	13	62
Roman Catholics,	14	35 churches. 40 clergy.
Millerites,	0	4
German Lutherans,	2	2
New Jerusalem,	1	5
Mormons,	1	1
Friends,	(?)	(?)
	100	1546

There are thus 625 Congregational churches in Massachusetts, and 207 chiefly Congregational, which profess the Unitarian doctrine. The Methodist Episcopal comes next, then the Baptists, after them the Universalists, numbering 147 churches; the Protestant Episcopalians, who have only 62 churches, and the Roman Catholics, who number 35.

The prevalence of Unitarian sentiments in Massachusetts, and particularly in the city of Boston, is familiar to every one who interests himself with the state of religion in the United States. I was not prepared, however, for the information given me by a young Universalist clergyman, with whom I happened to converse on this subject, that nearly all the old Congregational churches of the early settlers have become Unitarian. The fact is an interesting one, but the causes are not difficult to discover. The progressive spirit which pervades all minds influences the pastor as well as the people, and the Congregational system presents no bar to change of doctrine. A mutual agreement of

the officiating clergyman and a majority of his hearers —which a man of talent and management will readily contrive to secure to his own slowly altering and advancing opinions—is all that is necessary to change a Trinitarian into a Unitarian congregation. There is no church assembly to which pastor and people are amenable, by which discipline could be enforced and a unity and permanence of doctrine maintained. To the want of such a controlling power is ascribed the abandonment of Trinitarian principles by many of the old Presbyterian congregations of England, and the same cause has doubtless been influential in leading to the same result in America.

Whenever a man of powerful talent, or persuasive eloquence, arises in a congregation or among a sect which has no recognised articles of belief, and no central power to see that those articles are taught and adhered to, he naturally, almost necessarily, leads great numbers into his own views; and if these incline to a change of doctrinal opinion, many will change with him. This has been the case in past days in Massachusetts, is the case at the present moment, and will continue to be the case in all sects organised like that of the Independents. At the present moment a preacher of much talent, (Dr Bushnell) at Hartford, in Connecticut, and a professor (Park,) in the Theological Seminary at Andover, in Massachusetts, are praised by the Unitarians for their exceeding liberality of opinion, and my friend the Universalist spoke of the former with a kind of satisfactory anticipation. By the more orthodox of their own body, however, these men are accused of deviations from the professed doctrines of the Independents, while they are eagerly followed, and pronounced to be right, by their personal followers and admirers. It is right to allow perfect liberty to every man to change his own religious sentiments as often as he chooses, but it is a breach of faith

in one who has been selected, placed in the office of a pastor, and is *paid* for the purpose of teaching and upholding one set of doctrines to a trusting congregation, to take advantage of his position in order to inculcate other doctrines, and thus gradually to lead his congregation astray. An honourable man, when his opinions had undergone a change, would abandon his appointment. A church in which discipline existed would expel him from his office.

The reader is not to suppose, however, that this religious progression has anything to do with the democratic institutions of the United States. The same thing is frequent among ourselves. At a recent meeting of the Congregational Union in London, it was resolved, that the *Christian Witness* should no longer be recognised as the official organ of the Congregational Union of England; because the editor, Dr Campbell, and others, were endeavouring, in various ways, to "advance the principles of religion around them." Dr Campbell in his reply said—"It were preposterous in me to pretend to represent the opinions of any two of you. No two of you are agreed. You take widely different views from each other on the subjects of inspiration, doctrine, ordinances, polity, education, and much besides. Such a piece of mosaic, I am sure, you seldom cast your eye upon."

The state of the Church of England, also, at the present time, exhibits a melancholy illustration of such religious progression—only in this case it is backwards—and of the evil consequences to which laxity of discipline leads. The tendency is here as direct towards Popery, and at least as frequent, in the English Episcopal Church, as it is towards Unitarianism in the American Congregational one. Presbyterian Churches are far from being perfect, as the inaction of some of those in America upon the slavery question abundantly testifies; yet it is only fair to this denomination to state, as the result of

extended personal observation and inquiry, in many different countries—among the followers of the Greek Church in Russia, of the Lutheran Churches in Scandinavia and Northern Germany, and of the Romish Churches in Southern Europe—that, in the maintenance of sound doctrine and pure morals among their clergy, a discipline so fearless, energetic, and *open*, is nowhere exercised as by the public courts of the Presbyterian Churches of Great Britain, whether Established or Free.

A curious case of the change from Trinitarian to Unitarian doctrine in a church is presented by what is called the King's Chapel in Boston. This chapel, which was originally of the Church of England, in consequence, I suppose, of some endowments, still retains something of the form of the Episcopal service. It has a Liturgy, which is shortened and altered from that of the Church of England, and from which everything Trinitarian is excluded. The manner in which this is done, and something of the shade of doctrine which the congregation professes, may be gathered from the changes made in a part of the *Te Deum*. The first and last parts remain without alteration; but the middle portion, in which the Saviour is addressed, is changed as follows:—

English Liturgy.	King's Chapel Liturgy.
Thou art the King of Glory, O Christ.	Thou art the King of Glory, *O Lord.*
Thou art the everlasting Son of the Father.	And Jesus Christ is Thy well-beloved Son.
When Thou tookest upon thee to deliver man, Thou didst not abhor the Virgin's womb.	When thou gavest Him to deliver man, it pleased Thee that He should be born of a Virgin.
When Thou hadst overcome the sharpness of death, Thou didst open the kingdom of heaven to all believers.	When He had overcome the sharpness of death, *He* opened the kingdom of heaven to all believers.
Thou sittest at the right hand of God in the glory of the Father.	*He* sitteth at the right hand of God in the glory of the Father.
We believe that Thou shalt come to be our Judge.	We believe that *He* shall come to be our Judge.

We thefreore pray Thee help thy servants whom Thou hast redeemed with Thy most precious blood.	We therefore pray Thee help Thy servants whom Thou hast redeemed *through His* most precious blood.

The above verses, so altered, constitute the only *creed* which the Liturgy contains. Indeed, freedom of opinion is of the essence of the Unitarian Congregational churches; so that, although the clergy have frequent conferences at their stated quarterly and other meetings, yet very few of them agree upon doctrinal points. I was informed that many of them were verging towards Universalism, as one would suppose, indeed, was the natural tendency of their advancing views.

In an excursion I made on the Old Colony railroad, I had the fortune to meet a young, very amiable, and, I have no doubt, very sincere Universalist clergyman. He was on his return to his father's house from a preaching tour in western New York. He described this singular sect as very prosperous and increasing. It numbers 1200 churches, 700 ministers, and 60,000 communicants, in the States. It is particularly strong in Massachusetts, and, as he assured me, many of the Unitarian churches are believed to be tending towards them.

This Universalist body possesses a very large measure of toleration; but he informed me that no exact statement of their doctrines is to be met with in books. They are not digested as yet—they are only, in fact, beginning now to philosophise their opinions. They have among them men of almost all other sects—all agreeing to make their special doctrines non-essential, and to unite on the ground that all go to heaven together. My informant made morality a condition to the attainment of future happiness, by the belief that each man goes to heaven with the dispositions and relishes he has about him when he leaves the world, and thus is in a more or less fit state for the enjoyment of heaven—occupies a

higher or lower position of happiness, according to the life he has led on earth, and takes a longer or shorter time to progress towards the perfect enjoyment of the heavenly life. Thus there are different orders in heaven, different degrees of happiness, and a man's behaviour here may be said, in a sense, to determine his condition in heaven through all eternity. One can see how, upon a foundation of this sort, an argument for moral living may be based, and how men may be nominally kept together by it, where the charity is so large as to permit them to call by the name of brethren all who hold to their single characteristic opinion.

My accidental acquaintance was of the largest charity. He was well educated, and had studied theology three years at Cambridge—the best theological school in New England, according to his view. He thought different forms of belief were suited to different men, to different classes, and to different periods. He saw good, and found good men among all sects. With this perception of good I perfectly coincided, but when he took the Mormons for his case, and, except polygamy, did not think there was much that was absolutely reprehensible in them, I could not coincide with him. It would have been useless to enter into controversy, but I could not help asking—in connection with his notion of different forms of belief being adapted to different times and classes of people—if he did not hold that there was really any such thing as religious *truth* at all—if everything was non-essential. But the question elicited nothing.

We diverged into a conversation upon the Mormons and their practice of polygamy. I do not know how far the people on the Salt Lake, now asking for admission into the Union, really practise generally or hold polygamy to be legal. It will be difficult, I should think, in a new country like that, for many of them to obtain more than

one wife. But, supposing it to be declared legal among the people of the territory of Utah, and they apply next year, after having adopted a State Constitution, for admission to the Union, the curious question arises—Will Congress admit into the Union a state which practises and legalises polygamy? I subsequently talked this matter over with other friends in Boston and elsewhere, and there appears little doubt that Congress must admit the State, without any reference to the character of the State laws. The State must profess republican principles, and that is nearly all the Congress can demand. Every State makes its own laws of divorce, and the whole article of marriage is a matter of State regulation. If the Legislature of Kentucky declared polygamy lawful, it would become a domestic institution, as slavery now is. Their senators and representatives would bring their *harems* to Washington with impunity; and if one of the wives eloped to Boston, the husband could reclaim her without doubt, as he now does his slave—all the laws of New England against bigamy notwithstanding! An accident of this sort would create as much excitement among the females of the *non*-polygamous States as the arrest of fugitive coloured men is now doing among the non-slaveholding States.

Before quitting this subject of religious opinions, I may mention, as a thing which struck me much, the very great latitude of expression—of freedom of discussion, perhaps it may be called—which is taken and permitted here in ordinary society upon religious subjects. What would make every one stare at an English dinner-table, and some shudder, as in their opinion approaching to blasphemy, I have heard expressed, taken up, and remarked upon generally, without its appearing to be considered beyond or out of the ordinary topics of conversation, and nobody seemed to think it strange that persons of evidently small knowledge or capacity should

pronounce, as if *ex cathedrâ*, on religious points the most recondite and abstruse. This is probably peculiar to certain classes of society only, though I considered it strangely at variance with the silence and reserve maintained upon so many of those ordinary topics which form the common staple of conversation among us. Perhaps the training, education, and habits of the country are averse to general conversation; they may form men to dogmatise, rather than to converse; and when two men have dogmatically pronounced themselves upon a subject, conversation upon it—between them at least—is at an end.

Mr Colman, in his book upon England, mentions that when, on a visit to an English family, he was asked to what sect of religionists he belonged, he answered, "I belong to none." He seemed to think this reply worth of being put upon record, and a Bostonian may not readily comprehend how such an answer made in England may have been among the causes which led—as a friend of his expressed it to me—to many turning upon him the "cold shoulder" before he died among us. Such an answer, with us, is considered equivalent to professing no religion at all; and however desirous we might be to show kindness to such a man—as an American, or as a representative of New England agriculture—yet having acquitted ourselves of the claims of this feeling, we would rather, as a religious people, avoid any prolonged association with the individual. It may be well for other Americans who come among us to bear this in mind, lest they should mistakingly attribute to dislike of their nation what in reality may arise from a disapproval of the opinions or manners of the individual.

Where so much free thought and speech prevails upon religious subjects as in New England generally, one should not anticipate a large infusion of that Popish spirit which yields up all private judgment, and gives

implicit faith to the dogmas of a priesthood. There is here, nevertheless, in the Protestant Episcopal Church, a sprinkling of those worshippers of the Fathers and lovers of tradition who are troubling the Anglican Church; and, in the more southern States, both the number of this class is greater, and their tendency to Rome more distinct. Of real Roman Catholics, however, there are, in Massachusetts, as is seen in the list above given, only thirty-five congregations, with forty-five priests. They reckon the number of the Roman Catholic population, however, at 90,000, or one-tenth of that of the State. In this there may be some exaggeration, though the fact of Boston being a shipping port at which many emigrants arrive, the greater part of whom are Irish, may account for so large a portion of the population of Massachusetts consisting of this denomination.

Much has been said and apprehended in regard to the present and future influence of the Roman Catholic body in the United States. Of the entire population of the United States, however, they form barely 5 per cent, their numbers, according to their own estimate, amounting only to 1,276,300 out of the 23,000,000. This, considering the faith of the original French settlers on the Mississippi, and the flocks of Irish emigrants, is but a small proportion. Their strength consists in their unity and organisation, and in their keeping together and acting in masses. It is altogether a political and local strength. They impose by the force of their local vote, the noisiness of their people, and the showiness of their cathedral and other churches, and ceremonies, but their moral weight in the Union is small. While schools abound, and instruction is freely given and received, there can be no great inroads made upon the American-born Anglo-Saxon part of the population by the preachers of the Romish creed.

The only other sect that equals them in numbers in

the States is that of the Episcopal Methodists, who number nearly 1,250,000; but they have not the political strength, because they have not the unity and concentration, of the Roman Catholics. Yet, from the peculiarity of their pastoral system, and their skill in availing themselves of local energy and talent, perhaps the Methodists in the newer and thinly-peopled backwood regions are the fittest parties to contend, on equal terms, with the missionaries of the Romish church.

The Roman Catholic clergy have increased in the United States during the last fifteen years, but not to such a degree as to cause the alarm which many profess to feel. The increase from 1837 to 1849 has been as follows:—

	1837.	1849.
Dioceses,	13	29, and Vicar Apostolic and Archbishop.
Bishops,	12, coadjutors 4	26, coadjutors 2.
Priests,	373	1026
Churches,	300	1024

Their priests number only 1024, while the whole number of clergy in the Union is about 26,000. Surely the 25,000 Protestants are sufficient to countervail the solitary thousand Roman Catholics, however zealous, devoted, or intriguing they may be.

Compared with Great Britain, the number of churches, priests, and people in the United States are as follows:—

	Great Britain.	United States.
Bishops, .	12	27, coadjutors 2
Priests, .	972	1026
Churches, .	694	1024
Colleges, .	11	13
Population,	20,000,000	23,000,000

Taking numbers and population together, the machinery for conversion is more formidable in our own island than in the United States. But even here, were the

clergy true to themselves and the people—were the sixteen thousand priests of the Church of England alone to take a leaf out of the pastoral book of their most dreaded adversary — the force of reason alone, not only without the aid of legislation, but, as of old, in spite of legislation, would easily enable them both to maintain their own and to carry war into the heart of the enemy's camp.

It has been observed by some English travellers, and even made a matter of boast by American clergymen during their visits to England, that the clergy of all denominations live on more harmonious and friendly terms with each other than they do in this country. But they mistake, I believe, who attribute this to any important difference either in the Christian temper or in the religious sentiments of the clergy or of their people in the two countries. The great source of the heart-burnings, discontents, and battlings among the clergy of different denominations in Great Britain, is to be found in the difference of social position and political rights which they severally occupy. A clergyman of the Established Church can rarely associate, either in public or in private, with a Dissenting minister, without assuming, or having conceded to him in some form, a degree of superiority, which the Dissenter, perhaps a man of both more mind and more learning, sees with pain, feels to be uncalled for were the law equal, and probably in his heart resents with more or less indignity.* And feelings of a similar, though

* Many Dissenting publications show the existence of such feelings, which human nature indeed cannot well suppress. In the *Protestant Dissenters' Almanac* for 1851, the expression of them is frequently repeated in various forms: for instance, "There is a spirit of exclusion in society, little to its credit. The Non-conformist is not allowed to mingle on equal terms with the Churchman. In how few cases are Dissenters advanced to the honours of literature which are given in profusion to Conformists of far inferior accomplishments. In almost every selection of men publicly known to fill offices to which some

weaker kind, are occasionally entertained or awakened, between the laity of the Established and Dissenting sects among us. But in the United States, A has as good a right to his religious opinions as B, and has no cause either to modify or conceal them. The church which each attends has an equal claim to all privileges which the State yields to any religious body, and in an assembly of the clergy, the most distinguished by age, by talent, or by meritorious services, obtains precedence, whatever the name of the sect to which he belongs. It is political and social equality as citizens, therefore, and not, as I have said, either more equable minds or more Christian hearts, which produces and secures the greater apparent and outward harmony among religious denominations in the United States. No one ventures to assume above another; and thus the seeds of personal dissension find no mortified or wounded pride to nourish them.

It is natural that we in Great Britain, who are of opinion that it is the duty of the State to support true religion — and especially such of us as belong to the dominant church of the part of the island we live in — should prefer the relation between Church and State which now exists among us. And yet it cannot be denied that there is a simplicity in the relation between religion and politics in the United States — between rights civil or political and rights religious—which keeps them free not only from private and personal bitternesses, such as those I have above alluded to, but from many causes of confusion and perplexity which beset us at home.

social consideration is attached, they are systematically passed by. The clergy of the 'Church' are *fêted* with civic banquets, and uniformly toasted at public entertainments; the non-conformity of the larger half of the people being ignored." The grievances here detailed seem small, but they are the *natural* sources, nevertheless, of bitterness and alienation among *our* different denominations, which are unknown in America.

At one time an action at law is instituted against a clergyman of the Established Church for his refusal to bury a Dissenter, or to marry an unconfirmed person—at another, against a bishop for declining to induct a person he considers disqualified for a cure of souls—and the whole kingdom is agitated, and clergy and laity alike are involved in the excitement. Such things happen, because certain denominations in the island have consented to barter their freedom of religious action for a special share of the funds or protection of the State. In the United States, all churches deal — as our Dissenting bodies do—with their own members after their own fashion. What they do carries with it no civil or political disability, or disqualification of any kind. And whether individuals patiently submit to sentences imposed by their ecclesiastical superiors, or betake themselves to other denominations, neither the State, the public, nor their neighbours, concern themselves about the matter.

I think the recent proceedings of the Pope, in reference to his English hierarchy, have presented to many minds the value and importance of a soundly Protestant Establishment in a new light. With much numerical force, a vast amount of educated talent, great political influence, extensive wealth and a concentrated unity of action, a pure Reformed Established Church presents against the encroachments of Popery a barrier which no assaults from without could weaken or overcome. We have reason in these times to regret that our English Church has not been so kept pure, and that its strength as a barrier against Popery from without has been rendered suspicious by the secret hold which Popery has obtained of some of the strong places within.

CHAPTER XXVIII.

Boston continued.—Houses of Legislature.—Professions and pursuits of the members.—Clergymen in both Houses.—Majority law.—Visit to Lowell.—Comparison of the cotton manufactures of Lowell and Glasgow.—Weight of cotton consumed, of spindles and looms at work, and of yards of cloth produced in each.—Kind of goods made at Lowell.—Wages of male and female operatives.—Waste of female labour in the rural districts.—Opposition of masters and labourers at Lowell.—Dread of a manufacturing aristocracy.—Independence of behaviour in the employed.—Buying good behaviour.—Employment of machinery.—Female and non-adult labour preferred by the masters. Expensive management of the mills.—Effects of the removal of protection in cheapening manufactures in England.—Effect of savings and improvements to which necessity stimulates.—Allegation that the protection of New England manufactures does not raise the price to the southern consumer.—Free trade consistent with natural laws, were the world all untrammelled.—England and her colonies a self-sufficing world to themselves.—American tariff excused as a set-off against our tobacco duty.—Metamorphic rocks and poor soils of Massachusetts.—Tendency of the people to commerce and a seafaring life.—Attempts to improve the soil.—Early volumes of the proceedings of the Society for the Promotion of Agriculture.—Early use of nitrates.—Action of the Legislature in 1836.—Agricultural and natural history survey.—Quantity of grain produced in the State.—Importation of wheat necessary.—Influence of the rapid growth of Boston on the improvement of the adjoining country.—Making of land round Boston.—Taxation in Boston, and in the State generally, compared with that of Great Britain.—Harvard University.—Colleges in Massachusetts.—Addition of a new faculty to Harvard.—State laws as to students at the universities.—Popularity of Agassiz in the United States.—Views he has propounded in regard to the plurality of the human and other animal races.—Infidel nature of these views.—Why they have been eagerly received in the southern and in some of the northern States.—Value of the opinions of Agassiz.—Necessity

of looking his objections in the face, and fairly meeting them.—Deficiency of the requisite knowledge among our clergy to meet successfully such objections.

Feb. 18.—I this forenoon visited the State House, and went into both chambers of the Legislature. They had quite the air of places of business, and the Lower House consisted for the most part of plain-looking, homely, common-sense men. The number of the Senators is 40, and of the House of Representatives 297—in all 337. A large majority of the whole consists of farmers; but though most numerous in the Lower House, this class is in a minority in the Upper House. To this cause is to be ascribed the different views which the two Houses take occasionally of the same legislative measures when brought before them.

The following table exhibits the pursuit or profession of the members of Senate:—

Merchants, ...	10
Lawyers, ...	9
Farmers, ...	6
Manufacturers, . . .	5
Physicians, ...	3
Editors and printers, . .	2
Clergymen, shoemakers, masons, auctioneers, and granite-dealers, each 1,	5
	40

In the House of Representatives, again, there were—

Farmers, ...	77
Merchants and traders, . .	39
Lawyers, ...	24
Manufacturers, . . .	17
Boot and shoe makers, . .	14
Master mariners, . . .	13
House-wrights, . . .	13
Editors and printers, . . .	9
Carry forward,	206

Brought forward,	206
Clergymen, ...	8
Mechanics, ...	8
Lumber-dealers, . . .	4
Painters, ...	3
Physicians, ...	3
Civil-engineers and surveyors, .	4
Hat-makers, . . .	4
A variety of trades, two each, .	20
Do. do., one each, .	34
	297

Among these last there is one who designs himself *gentleman*—being the only one, I suppose, who lives entirely upon realised property. The lawyers, in number 24, and the editors of newspapers, 9, are influential bodies. What strikes us most is the number of clergymen, of whom there are 8 in the lower, and 1 in the upper house. They are all, as one would suppose, given to speak, and in both houses aspire to lead. Mr Upham, senator for Salem, a native of St John in New Brunswick, and formerly a Unitarian clergyman, is considered one of the most eloquent and able men in the upper house, where I had the pleasure of hearing him speak. In the lower house, on the same day, I listened to a Calvinistic Presbyterian clergyman, who is said to have much influence with his brother members.

It is by no means unusual for clergymen of the Unitarian persuasion to forsake the Church for the State House, to aspire to, and to attain, the highest offices of the State. Such was the career of Mr Everitt, formerly governor of Massachusetts, and minister to England. Indeed, when we consider how small the emolument is that clergymen usually obtain in New England, and the limited scope which the clerical career in most of the sects presents to a worldly ambitious man—we cannot wonder that the profession should be sometimes forsaken

by those who feel themselves capable of playing their part in active life, and are drawn by their inclinations to secular, rather than to sacred things. It is so easy also to try the career of politics, where the legislator is supported by the State, and requires no other qualifications than the confidence and votes of a majority of his fellow-citizens.

Massachusetts has long been, and still continues a whig state, though the majority of the whig party is not large; and the democrats are the more clamorous, as they command a large majority in the adjoining State of New Hampshire. The question under discussion in the Senate, on the day of my first visit, was what is called the Majority Law, an alteration in which has long been an object of desire with the movement party. By the constitution of Massachusetts, an absolute majority of the electors must in all cases support the successful candidate, otherwise there is no election. This law applies to all popular elections, and is interwoven with all the political and social movements of the State. It is easy to understand why the democrats, being still a minority, should wish to have the law altered—and how, if a simple majority of those who actually vote, or are present at an election, were capable of making a legal choice, the scale might often be turned in their favour. As this simple majority of those who vote is the rule in most other States, it is probable, however, that in Massachusetts the demand of the movement party must be ultimately conceded.

Feb. 28.—I this day visited Lowell, the much spoken of manufacturing city of this State, went through several of its factories, and enjoyed a short drive above the city, up the beautiful river Merrimack, from which the power that drives its machinery is derived. It is a clean spacious busy place, with wide streets, abundant

shops, comfortable hotels, rows of neat lodging-houses for the employed, and fifty large mills upon which the whole population depends. Cottons, plain and printed, woollen cloths, carpets and the machinery necessary for the spinning and weaving departments, are the principal manufactures of the place. Its rise, as all know, has been very rapid. In 1828 its population was 3500; it is now, in 1850, estimated at 25,000. The population, cotton consumed, spindles at work, and yards of power-loom cotton cloth per day made in Lowell and in Glasgow, are respectively as follows:—

	Population.	Pounds of cotton consumed per day.	Spindles at work.	Cotton cloths made per day in yards.
Glasgow,	368,000	144,230	1,800,000	625,000
Lowell,	35,000	109,000	320,000	352,000

On comparing the numbers under each of the above heads, it will be seen both what amount of progress has been made in Lowell, and what is the peculiar branch of cotton manufacture in which the mills there employ themselves, and come into competition with our productions.

In the *first* place, the quantity of cotton consumed, and of cloth produced, and even of spindles at work, is vastly greater in Lowell, in proportion to the population, than it is in Glasgow. It has more the character of a staple trade, therefore, and is more vital to the existence of the former place than to the latter. It is in fact a peculiarity of Glasgow, among all the great cities of the empire, that it can scarcely be said to have a staple trade—it is so equally dependent upon a variety of different branches of manufactures.

Second, It seems very remarkable, at first sight, that the weight of cotton consumed at Lowell should be only one-third less than is used at Glasgow, and that it should already produce more than one-half the number of yards of power-loom cloth which are woven in Glasgow. But

this shows in reality the infancy of the manufacture in the former place. The cloths produced are all coarse and heavy—sheetings, shirtings, drillings, and printing calicos—which are heavy to transport and are made of low-priced cotton. The cost of transport from Europe, upon goods of this class, forms so large a percentage of their whole value, as to give the American manufacturers the command of their own market for these articles, and even of part of the South American market—to which from the instability of politics, the long credits, the uncertainty of remittances and other causes, English merchants have of late years been declining to send these heavy low-priced cottons.

Third, The difference in the kind of trade carried on in the two cities is shown more clearly by the relative number of spindles. In Glasgow these are nearly six times more numerous than in Lowell;—or, in the former city, each spindle works upon an average $1\frac{1}{8}$ ounces of cotton per day, while in Lowell every spindle consumes nearly $5\frac{1}{2}$ ounces. There must, therefore, be a very great difference in the fineness of the yarn produced, in the delicacy of the machinery, the dexterity of the workmen, and the value of the material produced.

Lastly, The fineness and value of the cloth produced must be very much greater. All the yarn spun at Lowell is converted into cloth, and each spindle represents about $1\frac{1}{8}$ yards of cloth per day, weighing $5\frac{1}{2}$ ounces—or, on an average, very nearly 5 ounces per yard, including waste. Whereas, supposing all the yarn spun in Glasgow to be consumed in weaving the 625,000 yards a-day, the cloth would only weigh $3\frac{3}{8}$ ounces a yard. But it is well known that a large proportion of the finer yarns are sold for exportation, while the remainder are woven by the handloom weavers. A very considerable quantity, therefore, of the cotton actually spun does not enter into the power-loom cloths of Glasgow.

Another fact shows the higher relative quality and value of the Glasgow yarns and power-loom cloths. The number of power-looms, and the yards of cloth manufactured by each loom in the two places, is as follows:—

	No. of power-looms.	Yards of cloth woven per day.	Yards woven by each loom.
Glasgow,	25,000	625,000	25
Lowell, .	9,360	352,000	37⅝

So that the quality of the Lowell cloth is such that a loom will weave 37½ yards a day, while of the Glasgow cloth it will weave only 25 yards.* That is, supposing the looms to ply their tasks with equal rapidity, the Glasgow calicoes† and printing cloths contain 37½ threads in the same space which is filled up by 25 in the Lowell fabrics.

I presume that a similar difference prevails generally between the productions of the Manchester and American looms, excepting in so far as the former are employed in producing coarse fabrics for the home and colonial markets.

Now the deduction which I wish the reader to draw, and which I think he will draw from this comparison, is, that New England is employed almost solely in producing coarse and inferior goods, in which the quantity of raw material is great, and upon which the labour expended is comparatively small. The goods which it is of importance to us to produce are those into the price of which labour enters to the extent of from 50 to 80 per cent of the whole cost. Such goods Glasgow chiefly makes, and such goods Lowell does not; and none of the American manufacturers can yet make them so as to come into suc-

* Of No. 14 yarn, the Lowell looms actually produce on an average 45 yards a day; and of No. 30 yarn, 33 yards.

† Something of the still youthful character and primitive habits of the females of New England and of New York State may be gathered from the fact, that our twopenny or threepenny calico is usually called *muslin* among them.

cessful competition with British and German products, even in their own protected markets. We have not, therefore, cause for those gloomy apprehensions which alarmists delight to hold up constantly before our eyes, as if the honest and praiseworthy endeavours of our Transatlantic brethren were incompatible almost with our manufacturing existence. Let them advance, as we *should* wish they might. While they go on, we are not standing still; and though they have undoubtedly many advantages over us, yet I believe those we possess far outweigh theirs, and that, when the laws of international trade become properly adjusted between the two countries, the manufacturing products of the two will gradually so dovetail themselves into each other that the greatest commercial welfare of both communities will be promoted, while the mills and workshops of both are, at the same time, extended and increased.

People profess to be alarmed at the increase of manufactures in the United States, but in reality these manufactures are not increasing so fast as their population; and, in truth, there are two circumstances which must keep back the manufacturers from being able fairly to enter into successful competition with us, except in heavy goods, and in such as involve little labour. These are the high price of labour, and the expensive way in which manufacturing is at present generally conducted.

The male and female operatives at Lowell receive, in addition to their board, an average daily and weekly wage of—

	Per Day.	Per Week.
Males, . .	80 cents, or	20s. 9d.
Females, . .	33 ...	8s. 8d.

These wages are nominally higher than with us, and they must add a certain additional price to the cotton and

other cloths produced.* The increase of manufactories has had the natural effect of raising the price of labour, and of thus increasing the most important obstruction to a successful competition with ourselves.

In my travels in the agricultural districts of North America, I was everywhere, except among the French habitants, struck with the reckless waste of female labour which universally prevails. Household drudgery of any kind the females will perform in their own houses or homes, but out-of-door work is too degrading! To the daughters of the poor farmers of Vermont, New Hampshire, Massachusetts, Maine, and even of New Brunswick, the chance of employing themselves in a new form of labour, to which no fancied stigma attaches, comes as a welcome outlet for their wasting energies; and, consequently, from these sources the supply of factory females is chiefly drawn. It is certainly a pleasure to see the clean, healthy, and respectable appearance of these females at their work in the mills, and to hear of their steady and virtuous behaviour in private. One cannot but wish that such a state of things may long continue. But the struggle has already begun between the master and the operative—the employer and the employed. The price of labour is considered by the manufacturer as the great obstacle to a successful competition with England, and his anxiety is to reduce it. That of the labourer, who knows the bias of his employer, is to keep wages up. In this struggle, in spite of democratic institutions, the labourer must gradually give way. It has been so with ourselves. When the cotton manufacture was first introduced (so late as 1772) prices were high, wages were good, the sons of comparatively rich men went upon the loom, respectable females filled the first factories; and domestic comfort, healthy families, and general morality

* At Lowell about 7500 females, and 2000 males, are employed in the production of the 352,000 yards of cloth per day.

prevailed. But the demand for hands gradually introduced black sheep into the workshops, and disreputable neighbours into the crowded streets of the employed. It will be so sooner or later in the United States, and sooner in proportion to the rapidity with which the number of mills and work-people is increased.

The females live in boarding-houses, generally belonging to the factory in which they are employed. Their rooms and accommodation are very comfortable, costing them 1 dollar and 35 cents (about 5s. 9d.) a-week, and they are under careful superintendence. The *esprit de corps* is so strong that, upon the slightest suspicion of impropriety of behaviour, the suspected party must be dismissed, or the mills stop forthwith for want of hands. It is melancholy to think that the very progress of which Massachusetts is so proud, must inevitably bring this fine moral control to an end.

I have said that masters and workmen have already arrayed themselves on opposite sides in the manufacturing districts; and there are not wanting abundance of persons to foster distrust and dislike among the working classes. The democrats are jealous of corporations—of all persons who, by employing many, or bearing the relation of landlord to many, may exercise, directly or indirectly, what is regarded as an undue influence upon the elections. I was informed by a gentleman high in office in Massachusetts, that to the Irish who arrive at Boston one of the first lessons taught is, that the manufacturers in their new country are to the employed what their landlords were to them at home—what Britain is to Ireland!—that tyrant and slave are the relations they bear to each other. In consequence, nearly all such importations become additions to the democratic party.

Then, at the elections, the democratic press does not fail to stigmatise the 10,000 female workers as slaves, and the mill-owners as aristocrats, and to denounce the

influence exercised by their employers over the votes of the 3744 males employed in the mills, when the whigs gain the victory. This outcry on a late occasion became so strong, that, in self-defence, the mill corporations found it expedient to publish a list of votes, showing that no influence in favour of the whig party could have been exercised, inasmuch as a majority of the workmen and managers of the mills actually voted with the democrats.

How the feeling of soreness in the minds of the employed, comfortable and well paid as they are, is encouraged by the public press, is shown by such paragraphs as the following, which I extract from an Albany periodical:—

"That prince of manufacturers, Abbott Lawrence, has made a donation of 50,000 dollars, for the purpose of erecting suitable buildings, and endowing professorships, for a new department of education in the University of Harvard. . . . This magnificent gift of Mr Lawrence is worthy of praise. How vastly better to do good in one's own lifetime than to hoard up the shining dust. . . . And the inquiry has involuntary arisen in our mind, from whence came this vast wealth? From the looms and spindles of Lowell. And this is one of those men who have besieged Congress for *protection*, so they might live.

"Was any of this trumpet-tongued charity made up from the sixpenny a-week clippings from the wages of the weavers and spinners at Lowell? How many, many thousand extra hours of wearisome, life-wearing toil did it add to the over-wrought limbs and hands of the operatives, in order that *one man* may be gazetted as a great public benefactor?"

Even in the House of Assembly, corporations of all kinds have been denounced as instruments of oppression, and as means for overbearing and taking away the rights

of labour. This feeling of servant against master, of opposing rights, opposing interests, and opposing designs, are inculcated earnestly, and believed in, and acted upon, by many. I fancy the gentleman I walked with in Long Island, who talked so finely of the rights of labour, must have been one of this persuasion.

The independence of behaviour produced by this doctrine shows itself sometimes in very amusing ways. I was told at Boston of a gentleman in the neighbourhood, who, having engaged a farm-servant, found him very satisfactory in all respects, except that he invariably came into the house, and into his master's room, with his hat on. "John," he said to him one day, "you always keep your hat on when you come into the house." "Well, sir, haven't I a right to?" "Yes, I suppose you have." "Well, if I have a right to, why shouldn't I?" This was a poser from one man to another where all have equal rights. So, after a moment's reflection, he shrewdly asked, "Now, John, what'll you take—how much more wages will you ask to take your hat off when you come in?" "Well, that requires consideration, I guess." "Take the thing into consideration, then, and tell me to-morrow morning." The morrow comes. "Well, John, have you considered what additional wages you are to have for taking your hat off?" "Well, sir, I guess its worth a dollar a-month." "Its settled then, John, you shall have another dollar a month;" and the gentleman retained a good servant, while John's hat was always in his hand when he entered the house in future. So works democracy. The Kentucky people cast in the teeth of the Bostonians, that they worship the almighty dollar. At all events, even in a democracy, the stiffest has his price, and wealth cannot be deprived of a certain amount of influence.

Where feelings such as those I have spoken of, as

being stirred up and fostered at Lowell, take root to any extent among the workmen, and in a country where each grown-up man has a vote, the struggle to maintain prices must be both more violent and more prolonged than among ourselves, and the victory more frequently on the side of the employed. On the part of the masters, the tendency will be, in consequence, as much as possible to employ machinery, female labour, and persons under age, and as little as possible the higher priced, full-grown, more unmanageable, political-power-possessing labour of the males. The influence of this tendency, indeed, is already perceptible, I think, in the Lowell mills. It is machine or power-loom weaving that is almost exclusively practised. The "Lowell Manufacturing Company" make 12,000 yards of carpet per week upon 124 power carpet-looms, which are attended by women. It was a very pleasing sight to see the large rooms full of these beautiful carpet-looms, all braced together in one long frame-work of iron, the self-acting machinery by which the patterns are formed working as easily as if only plain calicoes were the fabric produced. The Middlesex Company, also, who manufacture 20,000 yards a-week of broad-cloths and cassimeres, upon 400 looms, and have 4 mills and 3 dyehouses, employ 730 women to 575 men.

Still, like our own manufactures, before they were submitted to so many trials, the Lowell and other mills in Massachusetts—as I was informed by an English mill-owner who had visited them much more extensively than myself, and with a view to judge of their economical condition — are conducted expensively, independent of the price of labour. He mentioned processes to me, in which he knew that large annual savings might be effected; and generally, he said, the "expense gone to, to produce such inferior goods, would not pay at all in England."

There are two reasons why this expensive management should continue. First, the mills are nearly all joint-stock concerns, and it is not in the nature of things, as a general rule, that a manager, who has at most only a small share in a business, should as earnestly seek after improved and economical processes as if the whole profit of such improvements were to come to himself and his few partners. Besides, protecting duties remove the stimulus to such improvements as would naturally cheapen the manufacture. At present the Lowell mills divide something less than ten per cent, while the import duty, charges and commissions, add fifty per cent to the price of English manufactured goods, before they can compete with them in the American market. So long as the other States consent to pay this fifty per cent higher price for manufactured goods than the same can be had for in Liverpool, so long they contribute not merely to pay a somewhat higher wage to the farmers' daughters who work in the mills, and raise the price also of all other labour in the country, but they encourage also a more expensive system of manufacture than would be adopted were the mill-owners left to their own wits, and to that natural protection only which nearness to the home markets gives them.

On the last removal of protection in England, four years ago, from an important branch of manufacture carried on in the county of Durham, a friend of mine, who is the managing partner of a large establishment, employing a capital of £250,000, and a large number of men, became greatly alarmed, as all in his trade were at the prospects before them. He had always been eager after improvements, had been constantly at the head of his trade during protection times, but now it was necessary to do something more. Continental makers poured in their accumulated stocks at low prices, to which he and others were obliged to come down. The first thing was a reduction of

wages—for some works actually stopped—and hands became plentiful; and the men themselves, when called together and satisfied as to how matters stood, consented to work for lower wages, without any grievous murmurs against their master. Then it was discovered by trial that a subsidiary article used in the manufacture could be dispensed with altogether, by which a saving of £1500 a-year was effected. This was a small item, but little wastes were discovered by which other small savings were arrived at. Then, as the result of another trial, the important discovery was made that, by a certain trifling alteration in certain furnaces in a direction in which it was formerly supposed that nothing remained to be done, the main or slowest process by which all the others were retarded, or kept back, could be shortened one half in time or duration, and thus all at once my friend acquired the capability of producing twice the amount of finished goods in the same time with the same fixed capital, and very little beyond the same number of hands. In the price of the manufactured article, the cost of labour entered formerly to the amount of 70 per cent. By these alterations this part of the price was reduced by 30 per cent; and this, with the other savings, lowered the cost of manufacture below the now reduced price obtained in the markets, so much as actually to leave a fair profit upon the articles. Meanwhile, the accumulations of the foreign manufacturers had been sold off, the remittances were probably found to be less than were calculated upon, and the imports diminished. The prices have, therefore, now begun to rise, and though they will probably never again approach to what they were in protection times, yet the cheapening of the article has so increased the consumption, that good times, which no fiscal legislation can again influence, are now looked for in this important branch of trade.

All this has not taken place without much individual suffering. My friend, with his skilfully managed concern, did not realise for two years more than three per cent upon the capital employed; but he made no actual loss beyond what was involved in the tear and wear of fixed capital. Other establishments, however, lost of capital £20,000, £30,000, and £50,000, and some were laid in altogether. But the public has benefited. The article has been permanently cheapened, and the trade itself has been set free from the apprehensions and anxieties to which a protected business always gives rise.

In the same way the removal of protection operates in every case. It will so operate upon the cotton manufactures of the United States. And it is not to be believed that the vast area of the Union, from Oregon to the St John River, will consent long to pay duties on manufactured goods which only serve to smother the genius, and prevent the full development of the energies, of the intellectual and rapidly progressing people of New England.

A gentleman deeply interested in the Lowell manufactures, not knowing my views, remarked to me, "The Southern States complain of the tariff. But that it does them no harm—does not raise the price of goods to them—is proved by this, that our Lowell cottons can compete in foreign markets with the English, and have even driven them out of some of the South American markets." "Then why retain it?" said I. "Oh, we don't want it." "But you, and your party, are the people who uphold the protective duties." In fact, in the coarse goods which the Lowell people manufacture, they ought to beat foreigners out of the home markets, and special circumstances which lend them a footing may enable them to do so in some other American markets. But the price of all those finer goods which are still imported from

Great Britain, Germany, and France, is raised from one-third to one-half by the action of the tariff; and this additional price the whole Union pays, that the energies of the manufacturers may be in reality repressed, and interests created such as arose under protection among us, and which it will be afterwards difficult to buy up.

All study of natural history, and of physical geography, shows that the Deity intended that one part of the world should minister to the wants of another, and that they should mutually interchange commodities and productions. Perfect freedom of commercial intercourse is consistent with, and pointed to, by all the arrangements and productions of soils, climates, and seasons.

Were the world all new, open, and untrammelled, universal free-trade, with our present knowledge, would be naturally permitted among every people. It may be a question whether or no such a system should be hastily returned to by a country like ours, which has long acted upon a wrong principle, and has created vast interests which must inevitably suffer much by the change. But there can be no question now as to the adoption of the false principle in a country which has its course to begin. It is contrary to the lights of the time to introduce protection where no protective duties have previously existed. It is true that the bounty given to the young manufacturer will encourage him to build workshops more rapidly, and in greater numbers, than if he had no such encouragement. But the protection must at last be removed, and then successive distresses, as with us, will arise, which the earlier prosperity may but indifferently repay. A slower rise of manufactures, in a country where the demand for labour for agricultural purposes is still great, would have based them on a safer, steadier, and less anxious basis.

There can be little doubt, I think, that, could England and all her colonies have clung together, with a free trade

among themselves, excluding all others from their markets, her own commerce and prosperity would have been at least as great as it is now. But such a system would have been contrary to nature. The rise of the cotton-trade has fortunately not only prevented its adoption, but has finally broken into fragments nearly every part of the system, as it had been previously introduced among ourselves. If the world requires an example of a nation returning to the natural principle of national inter-communion, it was right that in this, as in all other progressive movements, we should take the lead, and should suffer the first reverses which the change brings with it. Our sufferings will be in a measure over, when those of other countries, who delay to follow our later example, are beginning to commence.

The cotton, and the grain, and the sugar of the United States are now admitted into British ports without any protecting duty. My Lowell friend, who professed to repudiate the protection he enjoyed, yet justified the American tariff, on the plea that we still imposed a duty of a thousand per cent on American tobacco! This is a favourite reason among the Protectionist party in the States, and is especially directed by the northern men against the understandings of the tobacco-growers of the south. It ought to be a sufficient answer to any reasonable man, that the same duty is levied on tobacco grown in our own country; that, but for this duty, tobacco could and would be grown largely both in England and Ireland; and that thus the duty, apart from the social reasons for which it is imposed, is in reality an impost in favour of American tobacco. If, however, an adjustment of the revenue of the country could be easily made, by which the £3,500,000, yielded by the duty on tobacco could be otherwise raised, the argument in its favour—drawn from its being levied on an article which, besides being a useless luxury, is also a poisonous and filthy weed—

might be allowed to give way to other considerations. Besides removing a foolish objection from the mouths of foreigners, it would open up a branch of profitable rural industry to many of the richer soils of our islands.

The country through which the railroad runs from Boston to Lowell consists of metamorphic or altered rocks, and is covered with a poor, sandy, and granitic drift. It offers a specimen of the general character of the surface of Massachusetts, unpropitious, for the most part, to the labours of the agriculturist. From the first settlement of the province, indeed, the foreign population, employed in rural affairs, has been struggling with the difficulties of nature. Finding here and there a few more productive spots, they first occupied these, and from them, as so many centres, have gradually encroached upon the more difficult places, and have cleared and tilled large breadths of land, upon which both much energy was required to overcome the difficulties of nature, and much patience and perseverance to maintain the soil under productive crops. Nevertheless, out of the 4,500,000 acres which the State contains, 2,000,000 are still in forests, or naked, and reckoned unimprovable.

To this general poverty of the soil is probably, in a great measure, due the tendency to traffic, to shipbuilding, and to seafaring adventure, for which the State is distinguished. While the land held out few promises of profit, the original abundance of timber for building ships, and the numerous creeks which indent the coast, gave facilities for commerce by sea which have gradually collected the great mass of the population along its Atlantic borders.

But though thus, from necessity, a trading rather than an agricultural country, still the natural difficulties of the soil caused early inquiries to be made in reference to agricultural improvement; and, as far back as 1792, a

"Society for the Promotion of Agriculture" was established in this State. The first volume of their Transactions, now before me, was published in 1801, and contains many interesting practical and experimental papers; and it is very curious, in looking back so far as half a century ago, to find things distinctly brought forward then which are still considered new, and are published as novelties even in our time. Among these I may mention a paper by Dr Mitchell of New York, in which he describes the wells in cities as being always impregnated with *nitrates*, which filter through the soil; and adds, "That in well-regulated societies, aqueducts should be constructed for bringing water to towns from springs or sources considerably distant." The fact of this abundant presence of nitrates it has been necessary to prove anew, and more satisfactorily, within the last few years; and the sanitary precaution suggested by it, our Boards of Health have as yet been unable to persuade even our own nation generally to adopt.

Another paper in this volume, by a namesake of my own, is on the influence of saltpetre in promoting the growth of wheat, when the seed is steeped in it—a true and interesting fact, which will recall to mind the famous "Campbell's steeps," which, four or five years ago, were made the subject of so much pretence and quackery. This Society is still in existence; and though it has ceased to publish separate Transactions, and probably requires now an infusion of new blood, it numbers among its members most of the friends of agriculture in the neighbourhood of Boston, and has for its vice-presidents Mr Daniel Webster and Mr Abbott Lawrence.

About the year 1836, the Legislature were induced to turn their attention more directly to the improvement of agriculture; and they ordered geological, agricultural,

and natural history surveys of the State to be made, on a less extended and expensive scale than the surveys of the State of New York, but such as were very useful, very well executed, and very creditable to their authors, and to the State itself. The geological survey, by the well-known Dr Hitchcock, occupies a large quarto volume, and is accompanied by a map. The agricultural survey, which occupied about four years, was conducted by Mr Henry Colman, since known by his visit to this country. Mr Harris drew up the report on "The Insects of Massachusetts injurious to Agriculture;" Dr Emerson one on the Trees and Shrubs natural to Massachusetts; and Dr A. A. Gould on the Invertebrate Animals. The names of these latter gentlemen will speak for the excellence of their works, which were published and circulated extensively by the Legislature, and, though defective in engraved illustrations, have been productive of much good.

There are now ten or twelve county societies, in addition to the old Massachusetts Society, and each of these societies receives a yearly grant, in the proportion of two dollars for every sixty cents raised by the subscriptions of its members. These grants amount in all to 7000 dollars a-year. Instead of reporting to the central society, as in the State of New York, these separate societies all report directly to the Secretary of State; and this gentleman causes a general report, made up chiefly of extracts from the subordinate reports, to be prepared for the Legislature under his own superintendence. I suppose it is partly owing to the want of an energetic head, in the shape of a controlling and stimulating central society, directly responsible to the Legislature, that practical agriculture does not present itself in so progressive a form in this State as in that of New York.

Indian corn, oats, and rye—and in this order—are the

chief corn crops raised in this State. It has a population of nearly 900,000, and it raises of—

	Bushels.
Indian corn, about . .	3,500,000
Oats, . . .	2,000,000
Rye, . . .	666,666
Wheat, . . .	250,000

Its estimated consumption of wheat, according to the United States allowance of 3 bushels a-head, is 2,700,000 bushels. If 5 bushels be allowed, the consumption is 4,500,000 bushels; so that, from the north-western States, Massachusetts requires a yearly supply of 2,500,000 to 4,000,000 bushels of wheat. This fact serves to illustrate what I have already stated as to the inability of the country east and north of the Hudson and the great lakes—taken as a whole, and excluding Upper Canada—to grow wheat enough for its own consumption. Considerable attention has been paid in this State to the rearing of stock, and cattle are driven by jobbers as far as the borders of New Brunswick in search of a profitable market.

As in many other countries, the beautiful and important connection of commerce with agriculture is clearly seen in this naturally infertile State. The money gained at sea and in commercial Boston leaves the harbours and bays of the coast, and the wharves and streets of the city, to expend itself in laying dry the miry swamps of the inner parts of the State, in clearing the crowded boulders from the stony places, and in bettering, by various admixtures, the sandy and unproductive wastes. Thus the wealth which commerce brings is made to add to the permanent productive capability of the country, and, as in England and in Holland, commercial income is converted into agricultural capital.

The influence of the rapid growth of Boston in wealth and population is to be observed upon the surface of the

land for many miles around. Since 1800, the inhabitants of this city have increased as follows:—

1800, . . .	24,927
1810, . . .	32,250
1820, . . .	43,298
1830, . . .	61,392
1840, . . .	93,383
1845, . . .	114,366

The population has increased, therefore, about five times within the fifty years—a rate of progress about equal to that of Glasgow. In 1845, 76 per cent of the population were not born in Boston; but I am not aware what proportion of these consisted of foreigners. As the number of emigrants from Europe who land in Massachusetts is greater than in any other State of the Union, except New York, it is probable, however, that the European-born are in considerable force in the city.

Situated on a small promontory, and on a narrow neck of land surrounded by creeks, which at low water left long and broad flat beds of half-dry mud—as the town increased and covered the dry neck, it began to encroach gradually upon the muddy bottoms. To fill up and render these solid and available for building purposes, great efforts have been made. The gravel hills at the distance of many miles have been attacked by the agency of rails and steam, and new land formed from these spoils has grown up where the mud-banks were, as the wants of the place demanded. The long bridges which at present carry the railways across these sea-arms and muddy flats, remind the traveller, when seen from the top of the State House, of the bridges he may have driven along in crossing some of the broader Scandinavian fiords, or of those which span the Neva, or of one—not less remarkable than either, if we take into account the infancy of the country—which connects the two divisions of the town of Bathurst in the province of New Brunswick. As in New York, the

value of land has risen wonderfully in Boston in consequence of its confined situation, and large sums of money have been made by speculations in land. I have already alluded to the land-speculators, who busy themselves in trumpeting up the value of the new States in which they have secured large purchases; it may not, therefore, surprise the reader to learn, what certainly had not occurred to myself before I came to America, as a likely thing, that the largest fortunes in the United States have been made by speculations in the rise of land.

The city of Boston, for local purposes—including police, water-works, jails, wharves, public gardens, filling up flats, and local improvements—taxes itself to the amount of 65 cents on the 100 dollars of valuation. In the adjoining city of Cambridge, the tax is 55 cents. In the small township of Barnstable, near Cape Cod, it is 62½ cents; in the town of Springfield 45 cents;* and generally, throughout the State of Massachusetts, the average local taxation for all purposes is said to be not less than 50 cents to the 100 dollars. This taxation, in the several localities above named, is equal to—

Boston,	.	⅔ of a per cent.
Cambridge,	.	⅔ ...
Springfield,	.	⅜ ...
Barnstable,	.	⅝ ...
Massachusetts,	.	½ ...

There are some other trifling taxes imposed by the State, in the way of licenses to pedlars, auctioneers, &c., but, on the whole, it will be seen, by a reference to what I have said in a preceding chapter, that Massachusetts is less heavily taxed for State purposes than the State of New York. The principle adopted of laying the burden

* There is in Springfield a poll-tax of 1¼ dollar besides this property-tax. I do not know from whom nor for what purpose this poll-tax is levied.

upon the property instead of on the people, is the same in both. The import-duties levied by the Federal Government are also the same in both.

As regards their condition in comparison with our own, it will also be borne in mind that a property-tax of one-half of a per cent, added to the sum yielded by our import-duties, would realise nearly the whole of the £50,000,000 of which our present Imperial revenue consists. It is not, therefore, with the view of escaping taxation that our island-born will choose to go to the United States. If that be the main object, the colonies are the places to be selected.

Feb. 21.—This morning I went out to Cambridge, and spent a pleasant hour or two with Professor Asa Gray, whose works on botany are so deservedly esteemed.

The Harvard University, which is situated at Cambridge, is the oldest in the Union, having been founded in 1636. From this circumstance, as well as from its large endowments, its extensive library, the numerous staff of professors it possesses, and the literary or scientific distinction to which some of its teachers have always attained, it holds probably the highest place among the universities of the United States, though, in the total number of resident students, it is excelled by several of the others. In Massachusetts there are four universities, namely,—

	Professors.	Undergraduates.	Volumes in Library.	Denomination.
Harvard, at Cambridge, with	20	300	82,000	Unitarian.
Williams, at Williamstown,	9	180	9,650	Congregational.
Amherst, at Amherst,	12	166	16,000	Trinitarian.
Holy Cross, at Worcester,	14	120	4,220	Roman Catholic.

Harvard professes to have no sectarian bias, inasmuch as the students are allowed to attend public worship at any church they prefer; but, as a Unitarian minister officiates in the college chapel, it is fair to set it down as under the direction of that denomination. It was

founded by the original Trinitarian congregational ministers of the colony of Boston, but its teachers and governors have progressed with so many of the oldest congregations of Plymouth, Salem, and the early settlements.

Among the last advances made by this university is one which it owes to the munificence of Mr Abbott Lawrence, now American ambassador in this country. A Rumford professor of chemistry applied to the arts had long existed. To suit this to the wants of the time and country in some degree, Mr Lawrence proposed to widen its sphere, to establish a distinct school of modern science, pure and applied, comprehending chemistry, mineralogy, geology, zoology, botany, comparative anatomy and physiology, experimental physics, and engineering, to take rank with the schools and faculties of arts, divinity, medicine, and law, and to have its own students, courses of study, and university honours and degrees. In aid of this proposal he offered a donation of 50,000 dollars, and I believe he has since added other donations. The plan was agreed to by the University, and the scientific school is now in successful operation.

The numbers of students in the different schools in the session 1849–50 were as follows:—

Undergraduates, . .	300
Theological students, . .	17
Law students, . .	94
Medical students, . .	127
Scientific students, . .	35
	573

The students reside partly in rooms belonging to the university (college rooms) and partly in boarding-houses, and the whole necessary expenses of an undergraduate are from 200 to 250 dollars (£40 to £50) a-year.*

* The laws of the State of Massachusetts, regarding public instruction, enact as follows:—

Something of the character of this university, compared with those of England, may be inferred from the fact that there are only four resident graduates not engaged in further study, in some of the schools of law, divinity, &c.

Among the distinguished additions to its staff of teachers, which Cambridge owes to the establishment of its scientific school, is that of Professor Agassiz, formerly of Neufchatel. In securing the services of Agassiz, Mr Lawrence has conferred a boon, not only on the University of Harvard, but upon the science of the United States.

Besides the profound scientific acquirements which long European leisure and unabated zeal and labour enabled him to attain, Agassiz possesses an agreeable facility of communicating his stores of knowledge, even in the English tongue. He has consequently been much in demand as a popular lecturer since his arrival in America; and, from this kind of distraction, is in some danger, during the march of science, of losing that pre-eminent position as a leader in his own departments, which he possessed while in Europe.

The subject of Embryology is one upon which his lectures have been most useful and instructive, and, I believe, very generally acceptable. The *Vestiges of Creation* has been as generally read in the United States as at home, and has made many half-converts. Agassiz

"Sect. 9.—No inn-holder, tavern-keeper, retailer, confectioner, or keeper of any shop or boarding-house for the sale of drink or food, or any livery-stable keeper, for horse or carriage hire, shall give credit to any undergraduate of either of the colleges within this State, without the consent of the president, or of such officer as may be thereto authorised by the Governments of such colleges respectively, nor in violation of any rules and regulations of said colleges.

"Sect. 71.—If any person shall give credit to any undergraduate of a college, contrary to the provisions of this chapter, he shall forfeit a sum equal to the amount so unlawfully trusted or credited, whether the same shall have been paid or not."—*Massachusetts System of Common Schools, and Tenth Annual Report*, p. 168.

has in some measure stemmed this erring current of public opinion, and has done his adopted country and the cause of science good service, by setting forth in his lectures the true doctrine of development as opposed to that of Lamarck, popularised in the *Vestiges*.

On the other hand, he has introduced into his public addresses and published writings other doctrines of a somewhat startling kind, which, though well received in a free-thinking community like that of Boston, and for other reasons by the negro-haters, have nevertheless disturbed the minds of many sincere men, and filled them with new doubts respecting the relations of science to religion.

A man who knows his subject well, and is confident as to his conclusions, has a right to state these conclusions confidently and with boldness. But when these are of a kind unnecessarily to agitate the minds of his hearers, a public teacher may sometimes feel it a duty he owes to his science and to its cultivators, to waive a portion of that right, and not too suddenly to transport his audience to the farthest point to which he desires to carry them. In the words of Playfair, "reason sometimes carries us farther than (even) imagination dares to follow."

The notion of specific centres of animal and vegetable life is not new. That animals and plants are now restricted to certain limited areas of the earth's surface, and to certain heights above the sea, may or may not imply either that they were created within these several areas, or that the work of creation was performed at more than one period.

But Professor Agassiz has gone boldly into the question, and has maintained, in regard to existing animals—*first*, That from their habits they could not have been all created in one place; *second*, That from their very

nature they could not all have been created in pairs; * and, *third*, That from the general analogies of animal life throughout successive geological epochs, they must have been created at different and in successive times. And he strongly states his belief, that "the view of a unique centre of origin and distribution rests chiefly on the *supposed* authority of the Mosaic record, and is no way sustained by evidence derived from investigations in natural history," while the idea of animals being created in pairs, with the exception of Adam and Eve, "is entirely of human construction."

His own view he states to be "that most animals and plants have originated primitively over the whole extent of their natural distribution," and "that varieties are primitive and contemporaneous." He instances the lion, which has still a wide range over nearly the whole of Africa and a great part of Southern Asia. In this range the lion of the East Indies differs somewhat from the lion of North Africa, and this again from the lion of Senegal. These differences, which are sufficient to mark them as varieties, but not to distinguish them as so many species, he believes to be primitive. The lion, therefore, had a multiple origin, was originally created, and simultaneously, over these several districts, with peculiarities suited to the districts. He does not admit that climate and other differences have the power of modifying the species and producing the varieties. This, he says, "would be ascribing to the animals, or to physical influences, the wisdom and power of adaptation, which are the province of the Creator."

But he takes up, also, the origin and unity of the human race. Applying the same reasoning to man as

* "A bee-hive never consists of a pair of bees, and never could such a pair preserve the species with their habits. . . . . Was the primitive pair of lions to abstain from food till the gazelles and other antelopes had sufficiently multiplied, to preserve these races from the per-

to other animals, he arrives at similar results. There are well-marked varieties in the human species, and these varieties are located in different regions of the globe. The differences among these varieties, like those seen among lions and other animals, are primitive, and have always existed. Therefore, the origin of man is multiple. There have been separate creations of men adapted to different localities, either simultaneously or at successive times.

He admits that there is a unity among the different races of men, in so far as they partake of the same common *nature*, but he denies that they have all a common ancestry or parentage. He goes further: he maintains that Adam was not the first man, and also that the Book of Genesis does not say he was. His words are—"and that Adam and Eve were neither the only, nor the first, human beings created, is intimated in the statement of Moses himself, when Cain is represented as wandering among foreign nations after he was cursed, and taking a wife from the people of Nod, where he built a city, certainly with more assistance than that of his two brothers."

The gravity of the questions to which such opinions from such a man give rise, is not to be judged of by the apparent contradiction they give to such statements of Scripture as that, he "made of one blood all nations on the face of the earth," but in the deductions we must necessarily draw from them if true. If there were a plurality of creations of man, simultaneous or successive, Adam not being the first, what becomes of the doctrine of the Fall? and what of the Atonement, which is co-extensive in its operation? The first Adam and the second

secution of these ferocious beasts. . . . . Evidence could be accumulated to show, we will not say the improbability, but even the impossibility of supposing, that animals and plants were created in single pairs, and assumed afterwards their present distribution."

Adam are, in Scripture, opposed or contrasted with each other. As in the one all died, so in the other all are made alive. If there were many Adams and many Eves, the terms of Scripture must be rejected, or must be understood in a new sense.

In New England, and especially in Massachusetts, and the neighbourhood of Boston, the feeling in favour of Unitarian doctrine removes from the minds of many this objection to the reception of the views of Agassiz. Where the doctrines of the Fall and the Atonement are regarded only as Christian myths, they cannot influence the mind against any philosophical view which implies that these doctrines are void of the element of truth.

Then, in the slave-holding states, and generally among the negro-despising part of the population of North America, there is a predisposition to adopt a professedly philosophical deduction, to hail it with delight, indeed, when announced by an eminent authority—to the effect that races of men are primitive and persistent—that the negro was a separate creation from the white man, that he was always inferior as he is now, and that he is destined so to remain through all time.

Not only, therefore, have the views of Agassiz, so far as he has ventured to expound them, received many supporters as well as opponents, but they have in certain parts of the Union added greatly to his individual popularity.

Now, in considering questions so important and profound as these, so apparently subversive of the plain sense of Scripture, there cannot be a doubt that Agassiz has been led away, by his well-known enthusiastic temperament, to a too hasty promulgation of views which are very far from being substantiated. He believes the evidence sufficiently strong to *prove* that varieties in the human and other species are primitive, and he contends that his extensive knowledge of natural history makes

him a better judge than others are, of the extent and value of this evidence.

Now, the merit of great knowledge in his own departments must undoubtedly be conceded to Agassiz, and any opinion supported by the weight of his name is entitled to be received with a degree of respect. And the more so, that he has been hitherto favourably known as a defender of Christianity against the errors of the *Vestiges*. The custom, often followed in this country, of answering unchristian views by casting obloquy on the author of them, will not answer the end in this case. The assertions of Agassiz must be looked fully in the face, and fairly met—by men who know his own subject as well as himself, or who have made themselves fully master of the groups of facts upon which he chiefly relies.

I believe that before a calm lover of truth, cooler and sounder in reasoning, the supposed evidence relied on by Agassiz will for the most part disappear, and that the truth will come out the clearer for the trial.

At the same time, as natural knowledge advances, we must be prepared to review the interpretation or meaning we have been accustomed to attach to certain words, phrases, or passages of Scripture — to separate their supposed or received, from their necessary meaning — and thus to rid ourselves of interpretations which, not being necessary, may be represented as inconsistent with the known laws of nature.*

* That I may not be misunderstood as to the kind of concessions adverted to in the text, I append, by way of illustration, the following passage from a recent work by the Rev. Dr King :—

"I have found some persons startled at the idea that the world, as it existed before the creation and transgression of man, presents, in the delineations of geologists, so little that is paradisaical. But where does the Bible say that the whole earth was ever a paradise? If it had been so, what need would there have been for any paradise at all? Eden was brought into existence, if we are to believe the Scriptures in imme-

And further, it is worthy the consideration of all the friends of the Christian faith—that in our time it appears likely that Christianity is to be most seriously assailed on the fields of zoology, comparative anatomy, geology, and generally of the sciences of observation. Those whose duty and profession it is to defend and uphold the truths of Christianity, ought therefore to be somewhat familiar with these fields of knowledge—to know so much, at least, as to enable them, when need arises, to travel over and explore them without the help

diate connection with the creation of man, and its peculiar delights were found only within its own enclosures. A wide difference, therefore, between the general condition of the earth and the felicities of paradise is altogether conformable to the Scriptural narrative.

"Not a few, however, are particularly shocked to think that fossil remains should indicate the ravages of death among the brute creation, at periods anterior to the fall of man. They have been accustomed to regard death as in all cases the effect of sin, and they are confounded to hear of creatures having died in the earth before it was tainted or blighted by transgression. But let the following considerations be duly weighed:—1. If birds and beasts and creeping things had not died, they must have been immortal; and we at once perceive that there is an unsuitableness in the nature and extent of their powers to the inheritance of immortality. 2. The supposition of irresponsible and sinless creatures dying in consequence of the sin of man is a mysterious explanation of the facts; and instead of removing the difficulty, only replaces it by another. 3. The circumstance of man alone having been created immortal, is not at all more wonderful or unlikely, than that man alone should have been created rational. There is in truth a natural fitness that these wonders should go together—Reason and Immortality. As eternal life appears inappropriate to an insect, so, on the other hand, a duration equally brief with that of the brutes appears inappropriate to the faculties and affections, the retrospects and anticipations, of the soul of man. The immortality of the human body, and the happy immortality of the human spirit, were, however, made conditional on obedience. The apostasy of our race brought sad derangement over this seemly order; but surely the consequences have not been more disastrous than might have been anticipated from the acknowledged entrance of moral evil. 4. The Scriptures advance nothing at variance with these statements. They tell us of no tree of life, of which the lower animals might eat and live for ever; nor do they give us the slightest hint that such creatures expire, because our

of a guide or interpreter, and to meet the enemy to be encountered on the ground he may himself have chosen. But these are the very departments of knowledge from the study of which, in our universities, the future teachers and defenders of Christianity from the pulpit are systematically excluded. How many of our clergy, of any denomination, were able to expose the errors of the *Vestiges*? How many are now able successfully to encounter the new infidelities of Agassiz?*

first parents partook of the tree of the knowledge of good and evil. That brutes die because man has sinned, has been asserted innumerable times by divines of eminence; but I consider it unnecessary to enter into any critical examination of the few texts which have been supposed to favour this idea, as they have scarcely even a semblance of giving it any countenance. We are told, indeed, that 'sin entered into the world, and death by sin;' but it is evident that the Apostle, in so expressing himself, used the language in relation to man, for he adds, 'and so death passed upon all men, for that all have sinned.' (Romans, v. 12.) The death of animals is a fact in the course of nature, the truth of which all parties must admit. It creates, however, no special difficulty to the reception of our holy faith, for it contradicts in no way whatever either the Scriptural narrative or Christian doctrine. This objection, when justly viewed, only shows, then, how much safer we are with the Scriptures themselves, as our rule of faith and manners, than with the most ably executed and generally received systems of theology."—*Geology and Religion*, by the Rev. Dr King.

* A work against the views of Agassiz has already been published by the Rev. Dr Smyth of Charlestown, on the *Unity of the Human Race*—in which Agassiz's positions and theory are reviewed.

CHAPTER XXIX.

Etherisation at Boston. — Hospital and medical school.—Mammoth skeleton.—Improvement of the negro race.—Quincy and Braintree. —Expense of clearing land.—Apple, pear, and peach borers.—Husk of Indian corn.—Hock from the Catawba grape. — Vineyards of the Ohio river.—Agricultural implement stores.—Importers and jobbers at Boston.—German hosiery excluding English.—Smuggling into Canada. — Gallantry of the Kentucky Legislature. — Reasons of divorce in the different States. — Position of the female sex in the United States. — Proportion of male and female immigrants.— High price of native-born females.—Corresponding depression of females at home.—Plymouth and Forefathers' Rock.—Poor soil.—Labourers and their wages.—Pilgrim hall and graveyard.—The clam, a valuable and abundant shell-fish.—A clam bake.—Cultivation of cranberries.— Fresh water in sand-banks.—Anniversary addresses and the Pilgrim forefathers.—Their alleged great lights, and their tendency to persecution.—Providence in Rhode Island. — Farming in this State.— Position of the agricultural class.—Brown University.— Causes of its declension.—The existing universities do not supply what the most progressive classes of society require.—Comparative lowering of the professions.—Right of all to an education adapted to the pursuits of their after life. — Civilisation progressing in the line of material development.—Proposed changes and new courses of study in Brown University, to adapt it to the wants of the whole community.—Constitution and success of the University of Virginia.

March 1.—One of the most interesting applications of modern science to human comfort — the practice of etherisation—had its origin in Boston. The gentlemen to whom the world owes this happy application, are Dr Charles T. Jackson, who discovered and announced the principle, and Dr J. C. Warren, who first applied it in

practice. I had the pleasure of making the acquaintance of both gentlemen, and was indebted to them for many civilities.

I accompanied Dr Warren to-day to the hospital, and was present during the performance of several successful operations under the influence of the etherising agent. That which is preferred by Dr Warren is what is called chloric ether—a mixture of alcohol and chloroform.

This hospital of Boston differs from most of our public institutions of the kind, in having sets of rooms for paying patients. These looked very comfortable; and very respectable people are in the habit of occupying them. For a handsome room, board, and all attendance, ten dollars a-week was the rate of charge.

My stay in Boston happened to be during the time of the excitement caused by the murder of Dr Parkman, and the trial of his murderer, Dr Webster. I therefore willingly accompanied Dr Warren to the medical school, and to the class-room of Dr Webster. This school is the medical branch of the university at Harvard, and is attended by about one hundred and thirty students. Dr Warren has been a great benefactor to it, having presented to the museum his large anatomical collections; and the late Dr Parkman was another of its liberal friends.

I was on a subsequent occasion indebted to Dr Warren for the opportunity of inspecting the enormous and unique skeleton of the Mastodon found at Newburg, in New York, which is in his possession. It is nearly twelve feet high—is most complete, almost every bone being preserved, and its parts are admirably put together. The tusks are fourteen feet in length, and the animal, when alive, is estimated to have weighed nine tons.*

* A ton and a half is about the heaviest weight to which the largest of our high-bred bulls is ever fed.

It is far back, compared *with human history, since this* animal was clothed with flesh ; *and yet in the history of* the continent it is but as *it were the other day since* he and others of his huge race *threaded the woods* which overspread the vast area between *the Hudson* and the Mississippi.

To contain this great skeleton, Dr Warren has erected a separate building, in which are many other fossil fragments of similar animals, and the almost entire remains of a fossil Zeuglodon from the eocene deposits of the Carolinas. Boston is celebrated for the liberality of its citizens towards public institutions ; and several of those which are connected more or less closely with natural history are cherishing hopes that Dr Warren may select them to inherit these noble relics of the animal aborigines of North America.

Another part of Dr Warren's collections which interested me much, was that of skulls of the different races of men ; not merely as a general collection—for such are to be seen now in almost every capital city—but because of the special illustrations it contained of the heads of the negro race. It has been stated by persons worthy of credit, that the older buried skulls of the negro race, disinterred from the negro burying-ground at New York, are much thicker, and indicate a less intellectual character, than those of more modern date. Dr Warren showed me, in his collection, skulls of pure negroes of full blood, which he assured me were of enlarged size, and manifested greater signs of intellectual capacity ; and he expressed to me his conviction, that the negro race, by long residence in this more intellectual country, was itself becoming more intellectual. This is certainly in consonance with one's hopes and wishes for this unhappy race, and in accordance with the ideas of Blumenbach. But the upholders of the permanence and inalterability of pure races, meet us with the objection, " that there are in

Africa different tribes with different degrees of intellectual endowment; and that, to prove our case, we must trace the same family always mixing with the same blood for a couple of centuries, and show that the last of the successive generations is wiser and nobler in mind than the first. Though this has not been done, I am not willing to estimate lightly the matured opinion of so old and practised an observer as Dr Warren.

March 14th.—The ground was now free from snow, and admitted of observations being made upon the nature and capabilities of the surface. I spent this day, therefore, in a visit to a Mr French, at Braintree, about a dozen miles from Boston, along the Old Colony railroad.

As far as Quincy, about seven miles, the road runs over swamps and through hills of sand and slaty gravel. Upon these latter rests the poor soil upon which the early Bostonian settlers grew their Indian corn, as the red men they displaced had grown it there before them. In this township (Quincy) are the paternal seats of the Quincys and the Adams, among the most illustrious of the early names of the colony. These retain still the first farms which were the early rural homes of their respective families.

Around the village of Quincy there is some better land, but it becomes heavier and less sandy at Braintree. Here, however, it is or has been loaded with numerous boulders, often of large size, consisting chiefly of granite, but mixed with occasional masses of metamorphic slate, and of red sandstone conglomerate. The original cost of this land to its owners may have been trifling; but nobody can say what it has cost to clear it of stones and bring it into a condition in which the plough can make a straight way through it. Mr French owns a farm of 200 acres; and I walked over one or two fields, long cleared of wood and kept in poor pasture, which he was now clearing of stones with the view of adding to the

extent of his better land. To clear such land, and to build up the stones into a fence round a six or eight acre field, cost him at the rate of 150 dollars (30 guineas) an acre. The increased value of the land would scarcely equal this large outlay; but I found here more of the love of paternal acres — of a desire to improve and embellish, because the place is a man's own, and he is to reap both the profit and the pleasure of it;—more of what we think and feel at home upon such matters, in short, than I had yet seen in any other part of the Union. Each succeeding occupier does something to better or increase the available surface; and it is in this way that the wealth made in the city is poured out upon the rural districts, binding together city and country, and increasing, by every improvement, even when it does not repay the man who makes it, the permanent wealth and resources of the State.

I here had an opportunity of becoming acquainted, by personal observation, with a class of tree-destroyers, which are *comparatively* unknown in our own country. These are the borers. This class of insects is very characteristic of Northern America, and very abundant in individuals, species, and genera. The habit of boring is one by which it is peculiarly adapted to a region where the severity of the winter's frost destroys all insects which have not provided themselves with an adequate shelter.

The apple-borer is the larva of a beetle called *Superda bivittata*, which attains a length of a half to three-fourths of an inch. In June and July this beetle lays its eggs upon the bark of the tree near the root during the night. The white fleshy grub, hatched from these eggs, cuts a passage for itself through the bark, and bores into the body of the wood, casting its borings behind. It remains here two or three years in the larva state, during which time it ascends the trunk probably ten or twelve, or even more, inches, and is found at the end of its wanderings

covered only by the bark. Here it is transformed; and, casting off its proper skin in the month of June, it comes forth a perfect beetle, to deposit its eggs as before, and give birth to a new generation of pests. I saw the stems of young trees cut down in Mr French's orchard as useless, which, though scarcely thicker than my arm, were absolutely riddled with holes, ascending from four to eight inches, chiefly through the exterior inch of the wood. The cure is to spread lime round the roots during the summer and autumn, with the view of preventing the deposition of the eggs, and to bare the foot of the stem, and follow into their holes, with a crooked wire, those larvæ which have already secured an entrance.

The pear and peach trees also are each attacked by their own borers, which are species of *Egeria*, a genus which inhabits the stems of our European currant-bush. The beautiful sugar-maple is often destroyed by a coleopterous borer called *Clytus speciosus*. The magnificent American elm is subject to a similar visitation; and scarcely a tree of any value has not, in this country, its own enemy with a boring propensity. Even the squash is attacked by a borer, (*Egeria cucurbitæ*,) which frequently—as was the case with Jonah's gourd—causes the plant to die suddenly down to the root.

At a corn-mill on Mr French's farm, I found the stones in operation, crushing into coarse powder for animal food a beautiful sample of yellow southern Indian corn. No one can go to the United States without interesting himself more or less with the processes by which this magnificent and prolific grain is cultivated and manufactured into food for man and beast. I embraced the opportunity of collecting some of the pure bran, or outer husk of the corn, which is difficult to separate so completely as is done in the mill, with the view of examining whether, like the bran of wheat, it contained a large percentage of what is con-

sidered to be the muscle-forming ingredient of animal food. The result of analyses, made since my return home, shows that it contains, in a hundred parts,

	Water.	Mineral matter.	Muscular matter.
As taken from the mill,	14·75	1·21	13.25
After drying at 300° Fah.,	—	1·42	15·53

Like the bran of wheat, therefore, it is rich in muscular matter, and should be carefully preserved and given as food. Or it may be profitably used as a manure in circumstances where natural or artificial moisture in the soil enable it to decay with sufficient rapidity to supply the wants of the plant that is intended to be fed by it.

At dinner, Mr French treated me to a bottle of American wine from the vineyard of Mr Longworth of Cincinnati, on the Ohio, probably the best-known among Transatlantic grape-growers. This was prepared from the Catawba grape, a native variety, and was a species of dry hock, with a peculiar bouquet and flavour. This grape, according to Mr Longworth, produces, in the hands of a skilful *wine-cooper*, hock of all varieties equal to the imported, and champagne of the very first quality.

Mr Longworth has himself twenty acres in vineyard, under the care of Germans and Swiss; and the large German population on the Ohio are every year planting new vineyards, so that he states his belief that this river, "in the course of the next century, will be as celebrated for its wine as the Rhine." The best crop he has seen, was on the vineyard of a neighbour which yielded from the Catawba grape 900 gallons an acre. A fourteenth of an acre, from the best part of one of his own vineyards, yielded at the rate of 1470 gallons an acre. The wine meets a ready sale among the German population, at prices varying from 75 cents to 1½ dollars a gallon.

Several other native varieties are cultivated, one of

which, the Cape grape, yields a rough red acid wine, resembling—and, when doctored with brandy, equal to —the Teneriffe. Foreign grapes also thrive well with proper culture, and with proper shelter and warmth; but they do not become acclimatised. The native varieties alone seem fitted to be grown extensively and profitably for the manufacture of wine.

Among the characteristics of Boston which appeared to me to show how much more intimately the agricultural interest is here interwoven with daily life, than in English towns of equal size, were the numerous stores or shops which announced themselves as dealing in agricultural implements, seeds, and other wares specially adapted to the farmer. For the opportunity of inspecting one of the largest of these, and for many other civilities, I was indebted to President Quincy. The store itself was very extensive—the articles dealt in numerous and varied—the assortment of implements adapted to all branches of husbandry very large, and the different forms of the same implement preferred in and prepared for different parts of the country, very interesting to examine. The proprietor informed me that he had lately sold to one individual, and shipped for London, one hundred ploughs, of a description commonly used in this country, which cuts a furrow seven or eight inches deep by sixteen wide, and lays it over quite flat. A strong recommendation of this tool to lazy ploughmen is, that, if the ground be flat, it will traverse the field and do its work without hands, requiring assistance only at the turnings. This fact was told me with the slightest possible exhibition of exultation, and it was a proper subject for a little pride in a Boston implement-manufacturer. Our Ransoms and Slights are not easy to beat in first-rate tools for first-rate workmen; but if Mason & Co. of Boston can supply the English farmer with a cheaper tool of equal

quality, then it is due, not merely to the farmer's purse, but to the cause of mechanical improvement, that the English fields should be turned over for a time by American ploughs.

March 16.—I visited this forenoon the warehouse of an importer of hosiery goods in Pearl Street, the centre of the import business of the city. There are here three classes of merchants through whose hands imported goods go before they reach the consumer; and, therefore, besides freight, charges, and duties, three profits to be added to the price. The importer sells to the jobber on eight-months bills. These jobbers sell to the storekeepers in town and country, at twelve to eighteen months' credit; making together nearly two years' interest, at six or seven per cent, to be added to the other items which go to make up the price to the consumer. With the opportunity of selling directly to the storekeepers—which the New England manufacturers possess—they ought to be able to undersell British merchants, without the protection of a thirty per cent duty. In truth, this duty, as I have elsewhere remarked, seems likely to act more in crippling the energies of the acute and intelligent New Englander, than in promoting the general welfare or the ultimate and sure development of the manufacturing capabilities of the country.

In light cotton hosiery, the Germans are beating the English manufacturers of Nottingham and Loughborough out of this market. The latter cannot, or will not, make them so light and cheap. Their goods are confessedly better; but my informant said he had tried in vain to induce the party he dealt with, during his visits to Loughborough, to make the kind of goods he wanted; and he was against his will driven to the Germans, who would make him anything. This thin very light hosiery—stockings and shirts—is imported

for the southern market. It seems strange that, with means of direct intercourse, the merchants in the large southern towns should come to Boston and New York to buy British and German goods. They are themselves beginning to be alive to this fact; and direct commerce with Europe is one of the means by which the slave States propose gradually to loosen their dependence upon the free States of the north-east.

In heavy spun silk hose for the extreme North American market, the English makers cannot compete with the Americans themselves. Heavy spun silk wove shirts, costing 60 dollars a dozen, wholesale, are made for the colder regions. Strong woollen hosiery is also made in the New England States, to compete successfully with the English, and is manufactured expressly for the purpose of being smuggled across the Canadian border!

I had seen considerable interest at various times excited, where I happened to be, by the proceedings in the case of Power the actor, before the legislature of Pennsylvania, for a divorce; and by the documents which from time to time were published in connection with it. But this interest was nothing compared with that which I found agitating all the party at the breakfast table this morning, in consequence of an advertisement that a certain Mr Laurence of Boston would not in future be answerable for his wife's debts. The gentleman and his connections were well known in Boston. The lady was from Kentucky, where she and her family were also well known and very popular. One of our party, who was from Louisville, where the Kentucky legislature was then in session, was especially indignant at the insult offered to the State, as he said, by this advertisement, and was sure that something serious either would or ought to follow by way of wiping it out.

Shortly after, it appeared by the public prints that

the legislature of Kentucky had taken the same extremely gallant view of the matter—having passed a resolution, by way of instruction to the courts of law, that it should hereafter "be considered a reasonable ground of application for a divorce, that the husband had advertised his determination not to pay his wife's debts!"

In general, the divorce law is much less strict in the United States than with us. The causes for which—besides infidelity—it can be obtained, are more numerous in some than in others; and hence it is occasionally found convenient for a party who wishes to procure a divorce, to shift his residence for a time into another State. The following summary exhibits briefly the reasons for which a divorce can be claimed according to the laws of the different States:—

Maine.—Desertion five years; joining Shakers; imprisonment in the State prison or penitentiary five years; drunkenness for three years.

New Hampshire.—Desertion, or absence; not heard of for three years; three years' neglect of family; extreme cruelty.

Massachusetts.—Imprisonment seven years.

Rhode Island.—Desertion five years; habitual drunkenness; neglect of family; extreme cruelty; "and also for any other gross misbehaviour and wickedness in either of the parties repugnant to, and in violation of, the marriage covenant."

Connecticut.—Desertion three years; absence; not heard from for seven years.

Vermont.—Desertion three years; cruelty; imprisonment three years; absence seven years; neglect.

New Jersey.—Desertion five years.

New York.—Imprisonment two years in a State prison; incurable insanity; belonging five years to a sect which forbids marriage (Shakers.)

Pennsylvania.—Desertion two years; cruelty.

Ohio.—Desertion three years by either party; extreme cruelty; gross neglect; habitual drunkenness; three years' actual imprisonment.

Indiana.—Cruelty; habitual drunkenness; two years' imprisonment; "and any other cause where the court, in the exercise of a sound discretion, shall deem it reasonable and proper that a divorce be granted."

Illinois.—Desertion two years; cruelty; drunkenness; two years' imprisonment for crime.

Michigan.—Desertion two years; habitual drunkenness; imprisonment three years.

Virginia.—Desertion; cruelty; drunkenness.

Delaware.
Maryland.
Georgia.
} Divorces in these States seem to be entirely left to the Legislature.

Tennessee.—Desertion; two years' imprisonment.

Kentucky.—Desertion three years; felony; neglect to live with wife or husband; joining any sect which disavows marriage.

North Carolina.—Desertion; drunkenness; or any other just cause in discretion of court.

Louisiana.—Desertion five years; cruelty; imprisonment for infamous crime.

Mississippi.—Desertion five years.

Missouri.—Desertion two years; cruelty; habitual drunkenness two years; vagrancy; charging wife with infidelity.

Arkansas.—Desertion one year; cruelty; imprisonment for felony; drunkenness one year.

Wisconsin.—Desertion for two years; cruelty; drunkenness.

In all parts of the Union, it appears, from this summary, that the marriage tie can be dissolved without

great difficulty in almost every case. Divorces are, in consequence, much more frequent than with us.

It cannot fail to strike the reader as something strange, that a grave legislative body should have so readily made a State matter of the case of Mrs Laurence, to which I have alluded. But it is accounted for, in great measure, by the more unrestricted freedom of action, general influence, and visible power conceded to the female sex in the United States. This the European perceives soon after he lands in the Atlantic States, but it becomes more perceptible as he proceeds towards the west. There female conventions are occasionally held for the purpose of upholding the rights of women, and of demanding an equality in all matters with the male sex.

At first sight it appears difficult to account for this greater forwardness of the sex we are accustomed to defer to as the weaker and gentler and more amiable, as well as more loving and beautiful; and yet it is not an unnatural state of things in any new country like this.

For two hundred years a tide of emigration, more or less powerful, *chiefly of the male sex*, has been flowing from Europe to America. As soon as they are settled, these men look out for wives; and, as females are scarce, they are highly prized, much sought after, courted, indulged, and, it may be, ultimately spoiled. Even at this day, when the facilities for crossing the sea are so much greater, and emigration by families so much more frequent than formerly, the disproportion between the males and the females is very great. Thus, the immigration into the United States, during the three last years, consisted of males and females respectively—

	1847.	1848.	1849.	Total.
Males,	138,939	136,128	179,253	454,320
Females,	99,357	92,892	119,915	312,164
Difference,	38,582	43,236	59,338	142,156

Thus, in three years, an excess of no less than 142,000 males entered the States from Europe, bringing in as many extra competitors for the hands of the native-born American females, who are intended only to supply wives to the native-born American men. Then, as the emigrants spread themselves over the land, the unmarried females among them are picked up before they have proceeded far from the sea-board; and thus the scarcity of the sex increases the farther westward we go; and the value at which they are estimated by the men and by themselves increases, till, in the Far West, they attain a famine price, and there we have the paradise of women.

The same state of things exists in our Australian colonies, where the demand for female emigrants is constant and excessive.

Those persons, I believe, are wrong who see in the relation of the sexes in the United States only an imitation of French gallantry. It springs naturally from the cause I have mentioned, which is therefore the source, not only of the less retiring manners of the females, and their less strict submission to maternal restraint, but of the vices complained of in the great cities, and of the amalgamation which has been the bugbear of the southern States.

The same cause has operated in an opposite sense among ourselves. The thousands of our native youth who yearly migrate into the great cities, or emigrate to our numerous colonies, or to the States, never to return, leave behind a superfluity of the other sex. And thus, as in the time of Medea, if a woman has not wherewithal to buy a husband—beauty, fortune, connections—she must wear out her unsought affections upon an unvalued and perhaps laborious life. Hence the difference which strikes most, and most immediately, an American female when she leaves her own country and travels in Great

Britain. Time, the great leveller, will smooth down these differences too.

March 18.—Plymouth, the landing-place, and the site of the first settlement of the pilgrim forefathers of New England, is a spot which every New Englander wishes to visit at least once in his life. So many eloquent addresses have been made by leading men in the States at the annual commemorations of the day of landing, that even an old Englander feels a curiosity to visit the spot, if it were only to enable him more clearly to distinguish between the romance and the reality in what is said and written regarding it.

By the Old-Colony railroad, as it is called, the traveller is, or ought to be, transported in a couple of hours to the Plymouth Rock, the distance being only 37 miles. The time I was compelled to spend by the way to-day was nearly twice as long.

The morning was cold and overcast; and when I arrived at Plymouth, at half-past ten A.M., snow had already begun to fall, and, with a keen north-east wind, continued to drift along during nearly the whole day. It was not propitious weather, therefore, for an inspection of the town and neighbourhood, though it recalled more correctly the appearance of the place, and of the inclement season which the early pilgrims had to encounter in erecting their first huts and houses in this new world.

The soil is very poor and sandy over nearly the whole of this and the adjoining township, fitted only for the growth of rye and poor Indian corn. Large tracts of it can only be profitably covered with wood, and remains now very much in the state in which the first emigrants found it. It was but an inhospitable country for the pilgrims to force their food from, and they had often to eke out their winter's stores — sometimes to depend altogether—on the fish and clams of the bay and river for their support.

The wages of farm-labourers in this district vary from 12 to 18 dollars with board, and averages about 16 dollars a month. There used to be plenty of hardy fellows from Vermont—who are to Massachusetts what the Highlanders used to be to Glasgow and Edinburgh, the Dalecarlians to Stockholm, and the Westphalians to Holland—who were content with 10 or 12 dollars a month; but California has carried off many of these, and of other workpeople as well, and has thus raised the wages of those who remain. Labour is, therefore, in little request among the farmers of the region around Plymouth. Many think it more profitable to allow the ancient forests to spring up again than to continue to till it. Many even plant pitch-pine, (*pinus tæda*,) mixed in some better places with white-pine and scrub-oak, where poor grain-crops used to be reaped. The trees grow rapidly at first, and are cut down, like our copses, at the end of about twenty years, chiefly for firewood.

I visited the Pilgrim Hall, and looked at the relics of the settlers who came over in the May Flower, though the brevity of my inspection rather shocked the religious feelings of the old devotee to whose care the cold room was consigned. The old grave-yard of the forefathers had more interest for me, and the site of the ancient church, and the hill-top from which they so frequently looked seaward for supplies, and the spot on which the old fort stood, where they so often feared and awaited the attacks of their Indian neighbours.

The old grave-yard, where the bones of the earliest Saxon settlers in New England have mouldered to dust, is now covered by ambitious slabs of white marble, mingling their youthful colours with the sombre hues of the dark gray flag-stones, which mark the heads of the oldest graves. It is still a public cemetery, in which any one may claim a right to be buried; but the simple

equality of the old time has gone, and the rich have deserted the more memorable spot for a new cemetery which has been laid out on another hill about a mile higher up the stream, and overlooking the lake which the early settlers speak of in their letters, and hoped to make useful to themselves by-and-by.

Plymouth is still a small town, but a clean and comfortable one, where the traveller may spend an agreeable day, if he be more favoured by the weather than I was. It is chiefly dependent upon its fisheries of cod, mackerel, and halibut, and upon its clams. It has about forty vessels engaged in the trade; but competition has lessened its profits, and in consequence the prosperity of the town. In the summer the vessels go to the fishing; in the autumn they return and sort their fish, and in the winter take them south and bring back southern produce. In their situation—which secures them an unfrozen harbour, and enables them to go to sea in winter as well as in summer—and in their free access to the markets of the southern States, they have hitherto had an advantage over the more northern shipping.

Forefathers' Rock, that on which the pilgrim-fathers landed, appears to have been only a large boulder, remarkable, probably, from being the only large stone which the sandy beach exhibited. Half of it has been blasted off, and, encircled by a railing and inscription, has been placed in front of the Pilgrim Hall; the other half remains on the original site, now, however, in the middle of a street—the formation of piers and jettys having carried the modern landing-place farther into the bay.

Returning to a large hotel, built near the railway terminus, I enjoyed a very comfortable dinner, in which the chief novelty was *clam soup*. As a native and local dish, it was appropriate, and welcome to one who was in search of what the old times had seen and been. The clam, (*Mya arenaria*,) or long clam, as it is often called, to dis-

tinguish it from the round clam, (*Venus mercenaria*,) is a most valuable gift of the sea to the inhabitants of the coast of New England and New York. It is by many preferred as food to the oyster—abounds on the muddy and sandy flats which almost everywhere skirt the coast and the shores of the creeks—and is accessible to all as the water retires, during twelve hours out of the twenty-four. It is large, being from 3 to 5 inches long, by 1½ to 2 inches broad, and is cooked by stewing and roasting. About 5000 bushels a-year are sold in Boston market, besides the countless quantities which are consumed along the coast. In Long Island the pigs are accustomed to dig it up and feed upon it, as they are said to do the oysters at Shediac in New Brunswick, and "they follow the change of the tides with unerring sagacity."

It is also one of the best baits for cod and haddock. For the Newfoundland fisheries, therefore, it is taken out of the shell, put into casks, and salted. Seven bushels of clams are required to fill one barrel, and of these 5000, under the name of *clam bait*, are put up every year along this coast, and sold at six or seven dollars a barrel.

The giant clam, (*Mactra gigantea*,) which attains a size of 6 inches long by 2½ broad and 4 deep, is plenty in numerous places, and is esteemed by many; but it requires long stewing to make it tender. This is not the case with the round clam, (*Venus mercenaria*,) which is more abundant than the long clam towards the south. The latter is sold in considerable quantities in the Boston market; and, in those of New York and Philadelphia, supersedes almost entirely the long clam of the north, and is as much esteemed. From the purple interior of this shell the *wampum* or shell-money of the Indians was prepared. In those days Long Island was the great mine from which the supplies of wampum were obtained. A *clam bake* is one of the favourite amusements of pic-

nic parties to the shores of Massachusetts and Rhode Island. It is a relic, I suppose, of the Indian modes of cooking this fish. A hole is dug in the earth about 18 inches deep, and lined with round stones. In this a fire is made; and when the stones are sufficiently hot, a bushel or more of clams is thrown in, and covered over with fresh sea-weed, by which the steam is kept in. Prepared in this way, they are preferred to such as are cooked in a kitchen.

Parties of ten to twenty are most common at a clam bake, but sometimes a hundred together will set out with this, among other things in view, for their day's amusement. "On the occasion of a grand political meeting in favour of General Harrison, on the 4th of July 1840, nearly 10,000 persons assembled in Rhode Island, for whom a *clam bake* and a *chowder* were prepared." The chowder is a stew of fish, pork, onions, and biscuit, generally prepared on such occasions from fish caught on the spot.

Among the crops cultivated on a large scale in Massachusetts, which thrive on the peaty spots occurring among the sand hills and banks of this poor coast, and from which considerable profit is reaped in some localities, the cranberry is one we should scarcely think of in Great Britain. The American cranberry (*Vaccinium microcarpum*) is about twice the size of ours, (*V. oxycocus*,) being about half an inch in diameter, and is very productive when cultivated. As much as two bushels and a peck are sometimes reaped from a square rod of ground; and at three dollars a bushel, prize crops have yielded a return of 500 to 600 dollars an acre. The market for this fruit is extensive in the States, as preserved cranberries are eaten largely at dinner by almost every one, especially to white meats. The custom is an agreeable one, probably borrowed from the Dutch, and the stranger readily conforms to it.

Among the most curious of the natural phenomena presented by the sand banks which stretch from Plymouth round by Cape Cod, is that of the occurrence of fresh water within a foot or two of the surface, "wherever there is a body of sand above the tide-level, even with salt water on opposite sides, or altogether surrounding it." Such facts have been long known to navigators, and observed in various parts of the world; and this occurrence of fresh water is acknowledged to be a most beneficent provision for the wants of the sea-faring man.

There are three ways of explaining this phenomenon. Either the fresh water comes from springs which force their way up into the sand, or it is the salt water which, by filtering through the sand, has become fresh; or it is the rain-water which has collected in the sand, and is there held by the capillary attraction of the sandy particles, floating by its lightness above the heavier salt water beneath. The first cause is set aside by the facts, that springs occasionally appear bubbling up below tide level, without affecting such artificial wells, though dug in their neighbourhood; and that fresh water is in this way to be found upon sand banks in a bay where it is very scarce on the adjoining mainland. As to the second, it is certainly a curious and interesting fact, that salt water, by filtering through silicious sand, does actually become less salt. Mr Cabot found that a solution of salt, by passing through sand, lost two per cent of its specific gravity; and Berzelius and others long ago observed that the first portions of water, holding common and other salts in solution, which pass through a deep layer of sand, are nearly free from salt, but that those which follow come through with their original saltness. This cause, therefore, does not fully meet the case.

The third cause must, therefore, at present be most relied upon. The porous sand absorbs nearly all the

rain that falls. This descends as low as the level of low-water, and fills the sand to that depth. Beneath is the bed of salt water on which this lighter water floats. As the tide rises the fresh water is forced up among the sand, and thus its level in the wells rises and falls with the tide, though not exactly in the same proportion. Such rise and fall of the wells is observed on this coast, even in the wells upon the mainland. It is clear that if such be the explanation, the water must be limited in quantity by the extent of the sand bank or sandy beach, and by the height to which the tide rises; and also that, if we draw the water from a somewhat greater depth, it should be found to be brackish.

A concluding observation suggests itself in connection with this town of Plymouth. Anniversaries are held here, at which orations are delivered, often by celebrated and eloquent men, in which eulogies, such as the ancients used to lavish on their demigods, are heaped on the heads of the first settlers. Honest men these were—sufferers, some of them, from the persecutions of the age, but neither more enlightened nor more tolerant than those from whom they fled—nor clearer-headed, nor wiser, nor more energetic than tens of thousands of their countrymen, whom greater love for their country, more hopefulness, even in the midst of persecution, a more earnest desire, by staying at home, to labour for its improvement, or perhaps the inability to escape, retained at home. It is absurd to suppose that they brought with them more light upon any subject than they left in the country from which they came.

Nor ought they, on the other hand, to be especially stigmatised because they retained the persecuting views, in regard to religious opinion, which prevailed in Great Britain when they forsook it. Men did not then think of toleration as we Protestants now do. A uniformity of faith was generally believed to be essential, so that those

who dissented from the Established Church would have compelled all to come into their own private views, had the power been with them. In 1645, a minister in New England wrote—" It is said that men ought to have liberty of conscience, and that it is persecution to debar them of it. I can rather stand amazed than reply to this. It is an astonishment that the brains of men should be parboiled to such impious ignorance." And Roger Williams, the founder of New Providence, in Rhode Island, is represented as a " stubborn Brownist; keen, unpliant, illiberal, unforbearing, and passionate." He insisted " that the civil magistrate had no right to restrain or direct the consciences of men, and that anything short of unlimited toleration for all religious systems was detestable persecution." He was persecuted and driven from Salem by the other settlers; but he was himself as severe upon those who differed from him, and as intolerant as they.

It is no use either denying or palliating such things. They were no worse than thousands they had left at home; but certainly they were no better. They had subsequently an advantage over their English contemporaries, in so far as those things which the advancing reason of men, whether at home or abroad, recognised to be right, they were enabled at once to adopt; while existing institutions, interests, and habits presented obstacles in England which could be only slowly set aside, and with difficulty overcome. But that comparative slowness observable among us, especially as respects political progress, is for the benefit of mankind, inasmuch as it enables us to see the working of changes among men of our own race before we introduce them among ourselves—to modify them, so as to adapt them to the habits and circumstances, and thus to make them more conducive to the welfare of our home people. It serves as a moral drag also on that tendency to too rapid

alteration among our western brethren, which is probably inherent in a purely democratic and popular constitution.

March 21.—I went down this morning, with my friend, Professor Henry Rogers, to Providence, in Rhode Island—by railway a distance of forty-two miles—to pay a short visit to Dr Wayland, the president of Brown University, in that city. The road led in general through a poor agricultural country of sands and sandy gravels. About Providence, also, the soil is sandy, and, where loose, is blown by the wind.

Providence, the chief town in the small State of Rhode Island, is a clean thriving place, of about 30,000 inhabitants, well situated for trade, on a small navigable river, which connects it at a short distance with the Atlantic. The lower, or business part of the town, is built upon a flat intervale which skirts the river, while the sides and summit of the sloping bank which leads to the upland, afford sites for streets of well-built and pleasant residences, which overlook the low town, the river, and the flats beyond.

The city itself is replete with business and bustle. It is full of steam-engines and manufactures—more so, probably, and in greater variety, than any other city of its size in the Union,—unless, perhaps, the new town of Lowell be an exception. The State of Rhode Island, also, which has in all only a population of about 120,000, shows a larger amount of exports and imports, in proportion to the number of its inhabitants, than any other State in New England, Massachusetts alone excepted. It partakes, therefore, of the activity which distinguishes the most stirring part of the New England population.

The farming in this State is not in an equally fortunate and progressive position. The farming community as a body do not, more than in Massachusetts, occupy

the position in society which they ought to fill, and hence no farmer brings up his son to his own business if he can do what he thinks better for him. He sends him rather to a store, or into an office, and pushes him on, if he can, in these rather than in his own line. By so doing, he expects him not only to attain to a higher social position than that which is held by the farmer, but also to make more money in the same time than can now be done by farming.

It may be difficult exactly to say why, and yet in nearly the whole of North America which I have gone through, from Halifax to Buffalo, wherever there is a mixed population, the social inferiority of the farming class is everywhere spoken of. Around the large towns, of course, a superior section of this class is found; but in really rural districts—some small portions of Massachusetts, and some larger ones of western New York, are the only places which have impressed themselves upon my mind as being possessed and cultivated by a race of small proprietors who are fit to take social rank with their fellow-countrymen of other pursuits and professions.

This difference might be in a great measure removed by a higher education, and a more full development of the intellectual faculties through instruction; but it is a singular fact, that here, as at home, those who have most opposed the efforts made to provide special education for the agricultural classes, have been these very classes themselves, or their representatives in the Legislature of the several States. I have mentioned in a previous chapter, that the Legislature of New York proposes to establish an agricultural college, on a scale worthy of the Empire State; and that it is the indifference of the agricultural members which has delayed it from being sooner carried into operation. In the Legislature of Massachusetts, a similar proposal has been made,

and supported by almost every other interest; but, unexpectedly, at the last moment, when no opposition was anticipated, a leader of the agricultural body, himself a farming lawyer, rose and proposed a hostile motion, which was carried in the Lower House. It is, perhaps, the greatest evil which attends and follows the want of knowledge, that the ignorant not only cannot see its value, but act as if they really believed the possession of it to be pregnant with evil instead of good.

As to the farming of Rhode Island, I learned—*First*, That it cannot grow wheat profitably for the home-market of the State, because of the competition of the north-western States. *Second*, Nor early vegetables, as it used to do, for the supply of the large towns, and for which, being sheltered from the north-east winds by Cape Cod, its climate especially adapted it—because the southern steamers now bring from Charlestown earlier in spring what their own earliest lands used to supply. And, *lastly*, That as the midsummer heats, especially in droughty seasons like the last, injure the potato and turnip crops, the field of profitable agricultural exertion is rendered comparatively limited. These circumstances show that the farmers of New England have their trials perhaps not less severe than those under which we suffer at home.

Brown University is the only collegiate institution in the State of Rhode Island. It was founded, endowed, and has hitherto been directed and chiefly supported, by the Baptist denomination. It possesses only a faculty of arts, having no professional school attached to it, either of theology, medicine, or law. It has a president, five professors, two tutors, a well-selected library of 24,000 volumes, and about 150 pupils. The salaries of the professors are only 1200 dollars a-year; and the expenses of students, a large number of whom live in college-rooms, about 150 dollars a-year.

Dr Wayland, who has presided over the institution for twenty years, is a well-known writer on Moral Philosophy and Political Economy. He is a man of much talent, full of energy, and earnest to introduce a reformation into the collegiate system of his own university, with the view both of adapting it more to the wants of the place and time, and of converting it from being in some degree an eleemosynary, into a self-supporting institution. His ideas upon this subject have an uncommon degree of breadth and liberality, even for New England, and if he is enabled to carry them out in his own university, will tend very much to revolutionise the old forms and courses of instruction adopted from Europe, and so long followed in the other universities of the United States.

In the Union there are no less than 120 colleges, with 909 professors, besides 42 theological seminaries, 12 schools of law, and 35 of medicine. This is a vast array of collegiate machinery, to impart high instruction to the sons of a population of 23,000,000. It must be regarded, however, as a provision for the future wants of the vast region over which the institutions are scattered, rather than an adaptation of educational means to the wants of an existing people. Each new State being in theory an independent sovereignty, organises, as a matter of course, schools, academies, and colleges, upon, and for the use of, its own territory. Thus divided among thirty States, there are only four colleges, and thirty professors to each.

Many of these colleges are sectarian, and, in the present state of the Union, are not self-supporting; so that where they have not, like Harvard, large endowments to fall back upon, they are obliged to rely upon the contributions of the members of the denomination to which they belong, and upon yearly collections or subscriptions to keep them in a solvent state. During the last few years,

the students have been diminishing in Brown University, its income has fallen below its expenditure; and, unless a change take place, there is a prospect of its becoming also an annual burden upon the Baptist body, under whose direction it has always been.

Under these circumstances, it appeared to Dr Wayland, that the diminution in the number of students, and the consequent decline of the college, must be owing to one or other of three causes. Either the staff of teachers and system of teaching and instruction were not such as to obtain the public confidence—or instruction of equal value could be obtained at some of the other New England colleges at a cheaper rate—or, lastly, the article they had to sell, as he expressed it, was not what the people wanted, and therefore they did not come to buy it.

If the first-mentioned were the right cause, the remedy was, to remove the existing staff of professors, or so many as were considered objectionable, and to replace them by others more worthy of public confidence. To test this point, he tendered his own resignation, and thus forced the heads of the Baptist body to consider the whole question. After carefully weighing the matter, the professors, the discipline, and the mode of teaching were by the ruling body pronounced to be unexceptionable. The president was also prevailed upon to remain in office, at least a year longer, with the assurance that everything would be done to place the institution in the most favourable relation to the public — which, with the aid of his experience and practical wisdom, the governors should find possible to be accomplished.

Was the remedy, then, to reduce the cost of education, and make more of it purely gratuitous than before, with the view of meeting the competition of other universities in the adjoining States? If so, either large funds must be raised by subscription, to provide a sufficient endowment to defray the ordinary annual expenses, or the

institution must be closed. But upon examining the available statistics of six of the New England Universities, it was found that the number of students they contained, in 1850, was 261—only eight more than it was in 1830, or twenty years before. It was also found, that those schools which had lowered their rates of tuition, and the general expenses of residence—those even which educated the greater number gratuitously—had not increased their numbers thereby; but during the last twenty years, had even, by the use of these means, barely kept up their original numbers, notwithstanding the rapid increase of the population everywhere around them. This disposed of the second cause.

"I concluded, therefore," said Dr Wayland to me, "that the article we offered the public in all these colleges was not what the public wanted; and that, therefore, they did not come to take it even when it was offered for nothing. Let us offer them what they wish to have, and they will not only come to us to buy, but will not grudge to pay us a fair price for it.

"What is the article, then, we have been hitherto giving, and what new kind of goods will better suit the intellectual market of the present time?

"The great men who founded universities in ancient times intended, by their regulations, to make them generally useful to the people, so far as their lights went. We do not act up to the spirit of their wishes, by following the letter of their instructions in our time. Were they living now, they would see with our eyes, and reason by the aid of our knowledge; it is our duty, therefore, now to make them useful to the people of our time, according to our lights, and thus to make them accordant to the spirit of their intentions.

"But, independent of this pleading for the reformation of old institutions, in our free country every man has an equal right to education, both in common schools and in

colleges; and in the latter, to instruction in those special branches of knowledge which are to be of most service to him in the pursuits of his after-life. Of my four sons, who are equally dear to me, and equally valuable to the State, are the institutions of the country to provide collegiate instruction, which shall bear, more or less, directly upon the after-life of the two who are intended for the pulpit and the surgery, and not at all upon the future intentions of the other two, who prefer to be merchants, engineers, manufacturers, or farmers? The Almighty never intended that the minds of all men should be stereotyped from the same plates, or, like Indian heads, compressed in the same single mould.

"Like the other universities, we have hitherto trained young men for degrees in arts, and have conferred those degrees after mature examination. On comparing the amount of learning exacted in Brown University with that of other colleges at home and abroad, I find that we have demanded at least as much as any others to qualify for our degree, and we have been as conscientious and strict in our examinations. The branches we have taught have been more numerous than in the English universities, and have, as is the case with the other American universities, been modelled more after those of Scotland and the Continental countries.

"It is the course of study prescribed for our degrees, therefore, which is not suited to the wants of the time, and is therefore not popular, or in demand.

"Civilisation is progressing; but it is manifest to the most casual observer, that the movement of civilisation is in the line of material development—in that of the useful arts. 'The inducements to enter the learned professions have become far less, and those to enter upon the active professions vastly greater. The most coveted positions in society, seats in our highest legislative chambers, and even foreign embassies, await the successful

merchant and manufacturer, no less than him who has devoted his life to what is called a learned profession. And yet more: the number of those who consider a collegiate education indispensable to a profession, has for some time been decreasing. Men have begun to doubt whether the course we pursue is that best adapted to prepare men for the duties even of professional life.' *

"During the last thirty years, the position of the learned professions, therefore, in comparison with other walks of life, has been declining. There is, consequently, less demand for professional education; while for those who do follow professions, many doubt whether the course of arts is the best preparation; and hence another diminution of demand for collegiate instruction.

"The ancient Greeks attained the highest distinction as an intelligent people. What unspoken tongues had they as a part of their early training? We here, therefore, have no faith in any such study as necessary to the development of the human mind. We see that those nations are progressing fastest who are most distinguished by the application of scientific discoveries to the arts of life; the men among them who are the most distinguished in aiding this progression are also the most illustrious in their several countries. These owe no debt to dead languages; we may safely, therefore, insert in our academical, instead of the dead languages, other courses of study more suited to the wants of these leading classes of men."

This latter conclusion forms the basis of Dr Wayland's new propositions for reforming the course of instruction in the Brown University, adapting it to the wants of the time, and making it self-supporting. He proposes that degrees in arts should be given as heretofore. But as more learning than is now prescribed, in quantity and

* This last passage is from a pamphlet published by Dr Wayland subsequent to my visit to Providence.

mastered in a four-years' course, he proposes, at the pleasure of the student or his parents, to substitute, instead of so much Greek, Latin, and mathematics, an *equivalent* of certain other studies. And further, he offers special degrees or certificates of proficiency in any one or more branches of learning to which a student may prefer to devote himself.

With the view of providing such *equivalent* studies, he creates more professorships, and offers the public in Brown University the following courses of instruction :—

1. Latin, occupying 2 years.
2. Greek, occupying 2 years.
3. Three modern languages.
4. Pure mathematics, 2 years.
5. Mechanics, optics, and astronomy, with or without mathematical demonstrations, 1½ year.
6. Chemistry, physiology, and geology, 1½ year.
7. English language and rhetoric, 1 year.
8. Moral and intellectual philosophy, 1 year.
9. Political economy, 1 term.
10. History, 1 term.
11. In the science of teaching.
12. Principles of agriculture.
13. Chemistry applied to the arts.
14. Other sciences applied to the arts.
15. The science of law.

Some of these courses would require a lesson or lecture every working day, others only two or three in the week, and the same professor might conduct more than one course at the discretion of the governing body.

Now, the working of the system would be as follows :— The student or his parents, with the advice of the professors, will select the courses of instruction which he thinks will be most useful to him in the line of life he is afterwards to follow. He omits one-half or the whole of the Latin, or the Greek, or the mathematics, and he introduces instead a year and a half of chemistry, physi-

ology, and geology, or a course of political economy, and one of chemistry, and of mechanical science applied to the arts. And thus he makes up an amount of mental labour during the four years as great, on the whole, as that undergone by his fellow-students who prefer the Greek and the Latin; and at the end of the four years he passes his examination in the branches he has studied, and, like them, he obtains his degree. Or he chooses to confine himself during the whole time of his stay at college to one or two special studies—the classics, or mathematics, or chemistry—and before his departure he passes an examination and receives honours accordingly.

The object of this change, as I have said, is to adapt the institution to the wants, not of a class, but of the whole community. This adaptation—as he has since argued in a published report to the Corporation of Brown University—is *just* to the community, is *expedient* as a means of promoting the general welfare of the country, and is *necessary* to the future prosperity of the university,—"since the relative position of the professions, on which it hitherto depended entirely for support, and that of the mercantile and manufacturing interests in any of our cities, has greatly altered within the last twenty years."

I have, in the preceding pages, mentioned that I was early struck with the lower relative position occupied by professional men in the United States than among us. But the same change is also taking place, a little more slowly perhaps, among ourselves; and certainly from the same cause. The middle classes, in general information on subjects connected with the actual line of advancing civilisation—that of the applied sciences —are ahead of those who are educated in the universities; and, instead of looking up to, are rather beginning to look down upon them. Hence the struggle and difficulty which university men find to keep that place, formerly, as

anything to do with the modern tendency of our young clergy to rely for position and influence, not upon talents and professional labours, but on the dignity of office and the supposed sacredness conferred by the imposition of hands?

Dr Wayland's reasoning and suggestions have prevailed with the Corporation, and the new system has this winter been introduced into the Brown University.

There is one university in the United States—that of Virginia, founded by Jefferson in 1819—in which a system similar to that I have been describing has been followed since its foundation. It is the most liberally constituted university in the United States. The students are there allowed to select their own course of study, and, after three years and due examinations, to take out their degree of B.A. in that study. The professors are all equal in rank, and the president is annually elected out of their own number by the votes of their own body. The university receives 15,000 dollars a-year from the State, out of which each professor receives 1000 and a free house—the president for the time being has 500 more. The rest of their income is derived from the fees of the students; and as these are at liberty to select their own classes, the reputation of a teacher is an important element in regulating his income. There is no fixed chaplain appointed by the State. The professors elect their own chaplain, generally for two years only, and pay him by private subscription. The number of students in this university is about 320; so that it may be considered as very prosperous.

In a university which desires to stand well in public estimation, it is necessary not only that the students, but that the professors also, should be industrious and improving men. With the view of securing this, Dr Wayland contemplates also the introduction of the system of com-

petition in teaching, which is common in some of the Continental universities, where a professor extraordinary occasionally carries off the pupils from the ordinary professor. Discreetly applied, this principle may do good. But, in a university with small endowments, if unnecessarily introduced, it might disgust good men, and drive them from the institution.

The poverty of the Brown University is greatly in favour of the energetic and broad movement of Dr Wayland. Where the professors have comfortable and secure endowments, they are naturally disinclined to novelties; and where a university has scholarships enough to buy students, its heads will not trouble themselves with the wants and wishes of the public, or consult how they may make their institution most useful to the country in which it is placed. And yet, what a waste of pecuniary and mental power in suffering so much excellent machinery to employ itself in preparing so unsatisfactory a material!

CHAPTER XXX.

Free-soil and abolition meetings at Boston.—Attack on Mr Webster.—His speech in Congress.—Alleged natural unfitness of New Mexico for slavery.—Intelligence of a Boston meeting.—Stump orators of the southern States.—Use of the abolition party in the States.—Extreme religious views of the leaders of this party.—Dr Webster's trial.—Energy of a Boston jury.—Common schools in Massachusetts.—Principles on which they are based.—Most important facts regarding them.—Amount of assessment levied for school purposes.—What such an assessment would realise in Great Britain.—Private schools in Massachusetts.—Why these are necessary.—Proposed payment of professors by a public tax.—Education schemes of the early reformers.—Parish-school system of Scotland.—Recommendations of John Knox.—His plans fully carried out eighty years after in Massachusetts.—Expected influence of New England schools on ours at home.—United States' arsenal at Springfield.—Connecticut valley and river.—Amherst college.—President Hitchcock and the footprints of birds.—Greenfield and the Upper Connecticut.—Mr Marsh's collection of bird-tracks.—Turner's Falls.—Valley of the Westfield River.—Potsdam sandstone in Berks county.—Soils of the Black River limestone.—Sail down the Hudson.—Compared with the Rhine by Mr Cooper.—Higher ascent of the tide in this river compared with former times.—Causes of this.—Case of the river Wear.—Interest attending such observations.—Clubs in Boston.—Discoveries of mineral phosphate of lime in various parts of the United States. Importance of this to British and American agriculture.—Return to England.

March 22.—During my stay in Boston, I have attended two separate meetings in Faneuil Hall on the subject of slavery—one called by the Free-soil party, the other by the extreme Abolitionist or Garrison party.

The attack of the Free-soilers was chiefly upon Mr

Webster, on account of his speech in Congress on the 7th of this month. In this speech Mr Webster declared his opinion to be, that there was no territory in the possession of the States in regard to which legislation, as to slavery, was possible, or, if possible, could do any good. The vast territory of Texas—so large that a bird could not fly over it in a week—was already, he said, secured to slavery by treaty, so that the faith of the nation was bound up in the acknowledgment of slavery there;—while as to New Mexico and California, slavery was impossible there, from the nature of its climate and soil; so that, were it proposed in any bill to apply the Wilmot proviso to these countries, (no slavery north of 36° 30′,) "I would vote against it. The use of such a prohibition would be idle as respects any effect it would have upon the territory; and I would not take pains uselessly to re-affirm an ordinance of nature, nor to re-enact the will of God." To the first of these reasons of Mr Webster, it was answered, that the treaty with Texas was unconstitutional, and not binding—in which a statesman, however, would scarcely concur. To the second, that it was not true; and upon this the chief issue was joined. Mr Webster explained his meaning to be, that such slavery as exists in the southern States, for the cultivation of sugar, cotton, tobacco, &c., could not exist in those States, and therefore, "why re-enact the will of God." But it was answered, that the same thing had been said of Texas, though since annexation the statement had been proved to be untrue, and that too little was yet known of the physical geography of New Mexico and California to entitle any one to give a positive opinion on this point. But even supposing cotton and sugar could not be grown, yet slavery—as of old, in New York and New England, and in still older times under the Greeks and Romans—might be maintained in various forms, and for various purposes, in these new States, if the Federal Govern-

as many may think, a deserved punishment, to all free states of the Anglo-Saxon blood, if the retention of slavery in this vast south-western country shall enable cheaper and more manageable labour to be applied to manufacturing purposes, where soil and climate forbid the profitable employment of it in the cultivation of the soil. Amid the increasing misery and degradation of our labouring populations, we shall then regret that the power we once possessed was not exercised more vigorously for the establishment of freedom among a race of men whose condition must exercise a certain measure of influence upon our own.

But that, in reality, the system of slavery is not considered to be excluded from New Mexico by a natural necessity, as was argued by Mr Webster, may be inferred from the final result of the California admission and slavery questions in Congress. By that result, and with Mr Webster's concurrence, an area of New Mexico proper has been handed over to Texas and slavery, equal to 95,000 square miles.

It is not difficult to reconcile this action of Mr Webster, as Secretary of State, with all his previous declarations, when circumstances were different; but it must have cost him much to consent to this increase of the slave territory of Texas—to the admission of three new slave States formed of its territory, and to the giving of a territorial government to New Mexico without an anti-slavery proviso—in the face of the strong language in which he expressed himself on the subject of slavery in the territories so late as 1848. "My opposition to the increase of slavery in this country," he said, "or to the increase of slave representatives in Congress, is general and universal. It has no reference to the lines of latitude or points of the compass. I shall oppose all such extension, and all such increase, in all things,

under all circumstances—even against all inducements, against all combination, against all compromise." It is no wonder that after an incautious declaration of this kind, comments should tell before a public audience—as they did on the occasion I refer to—upon his yielding to and supporting the Clay compromise, admitting representatives from three new slave States, and refusing to legislate for the security of freedom in the territories.

One circumstance at this meeting struck me very much, as indicative of the intellectual character of the large mixed audience—the first of *the kind* I had been present at in America.

Mr Webster had on a former occasion described the Wilmot proviso as his thunder; and as he now declined to press it in reference to the territories, I suppose he had alleged or implied that others ought not to urge it against his wish. The speaker, who was on his legs when I entered, had discoursed for some time upon other topics, when coming to this, he likened it in Webster's hands *now* to "the mimic thunder of a marble God." This beautiful comparison had scarcely escaped from his lips, when every voice, male and female, in the vast hall, resounded with acclamations. It seemed to go as direct to their hearts as any bolt from the mouth of Demosthenes ever did to those of the Athenians. I confess that from that moment I looked with a degree of respect on the many unknown people around me.

I suppose the intellectual character of this Boston audience must have been somewhat different from that of the audiences to whom orators address themselves in the southern and western States. It is the custom there, as I was informed, for rival candidates to meet the people at a common rendezvous, and to harangue them from neighbouring stumps, the cleverest fellow obtaining the largest audience, and finally securing the majority of votes. On a certain occasion of this kind, one of

the candidates had succeeded by the superior raciness of his eloquence, in collecting nearly all the people about him, while the other was left comparatively alone. Upon this the deserted rival took out a fiddle and began to play, upon which he was speedily surrounded in his turn, and his rival forsaken. The latter, then put to his wits' end, observed the bow of the fiddle to be in his antagonist's left hand, and immediately pointed it out to one of his own friends. "You see he plays with his left hand—he thinks that good enough for you—ask him to give you a tune with his right." The cue was taken. "Why do you play with your left hand? You think that good enough for us: play with your right hand." And as no explanation could drown the cries, and atone for the supposed insult, he was obliged to quit the field, and leave his adversary victorious.

At the meeting of the Abolition Society, nothing struck me beyond the large number of coloured people who were present in the body of the hall, and the somewhat rigmarole, though not unclever speech, of a black clergyman who was opposed to all compromise. Extreme men, like Garrison and his party, seldom have justice done to them. It is true they may be impracticable, both as regards their measures and their men; but that unmixed evil is the result of their exertions, all history of opinion in every country, I think, contradicts. Such ultra men are as necessary as the more moderate and reasonable advocates of any growing opinion; and as an impartial person, who never happened to fall in with one of the party in the course of my tour, I must express my belief that the present wide diffusion of anti-slavery sentiment in the United States is in no small degree owing to their exertions.

At the same time they ought not, I think, to be disappointed that Englishmen and Scotchmen — and especially English and Scotch clergymen—do not, and

cannot, unite with them, and appear upon their platforms, when they visit the United States. We are generally a religious people, and have a certain regard to what we consider the soundness of the religious principles of those with whom we associate — at least we rather shun those who openly avow and publicly propagate opinions which differ very widely from those we ourselves profess, or which are generally professed by the people among whom we live. Now, Garrison and his friends are notorious, even in this most liberal city of Boston, for their ultra views upon certain matters of religious belief. It is impossible, therefore, that a British orthodox clergyman would be seen associating much with them, without incurring the censure or suspicion of the good men of his own persuasion in the United States, and being open to censure, and perhaps deposition, on the part of the church to which he belongs, on his return to Europe.

A few years ago, a clerical deputation from the Free Church of Scotland visited the United States, and, on their return home, some of the Anti-slavery Society in London, and of their followers in Scotland, attacked those clergymen for avoiding Garrison and his party while on their North American tour, and they found some supporters even among the members of the Free Church itself. I sympathise strongly in the general objects of the Anti-slavery Society, and I have in many ways aided to promote these objects; but in this matter they were wrong. Broad and avowed differences in doctrinal opinion—thrust forward, as I may say they have been, unnecessarily by the abolitionists—will always, and I think ought to, shut out from communion and public co-operation with them, the orthodox clergy of Great Britain of every denomination. With laymen the case is different. On a public platform, where a purely social question is under discussion, differences of sentiment on religious topics

among laymen ought not to prevent cordial co-operation. Nor would the public in general trouble themselves in this country—in the United States not at all—with the religious opinions of those who addressed them at public meetings, unless it were perhaps to be considered an argument in favour of the topic under consideration, that persons belonging to so many different religious denominations all agreed in supporting it.

March 23.—I spent a couple of hours this morning in listening in the court-house to the testimony of Littledale, the principal witness against Dr Webster, now on his trial for the murder of Dr Parkman. There was much prejudice against this man, who was considered more likely than Dr Webster to have perpetrated the murder; and, with that prejudice on one's mind, he certainly did appear to give his evidence in a suspicious manner. So difficult is it for a man, who is conscious that he is himself suspected, to give evidence in a case of life or death in a natural manner. Dr Webster himself sat very quietly and composedly in the dock. One of the coollest things I heard of his doing while thus sitting in the dock, was that of thrusting out his arm and shaking hands with the Rev. Dr Parkman, a brother of the murdered man, as he happened to pass near him on his way into the court.

The trial of this man excited intense interest in Boston. Every morning the report in the journals of the previous day's proceedings was eagerly devoured; and crowds at all hours flocked to the courts to get a peep at the man himself. Opinions were very much divided as to the guilt of the man, the result of the trial, and the chance of execution should he be convicted. The two latter points were rendered doubtful by the strong feeling against capital punishments, which has gradually arisen in the State of Massachusetts.

Perhaps the most remarkable circumstances in con-

nection with this trial are these two—that four or five persons of undoubted veracity should have sworn that they saw Dr Parkman after the time when he was alleged to have been, and when he actually was, murdered; and that, in the face of such testimony, the jury should have had the moral courage unanimously to pronounce him guilty. As a moral evidence of the value of human testimony, the former is very curious—as to the mental energy of a Boston jury, the latter is not less striking.

A stranger from Europe cannot be in New England long without hearing, if he has not been familiar with the subject before, of its system of common schools—a system of which the parentage is claimed by the State of Massachusetts. In regard to this system, now so familiar to European minds, which is spreading over the whole Union, and is exercising an influence over our Cis-Atlantic systems, it is unnecessary to enter into details. Two sentences from the report of Mr Horace Mann upon their school-system seem to embody the main reasons for its adoption by the people of New England. In the one he says, "Not only in the beginning, when God created the heavens and the earth, did he say—'Let there be light;'—whenever a human soul is born into the world, its Creator stands over it, and again pronounces the same sublime words, 'Let there be light.'" In the other, "that vast variety of ways in which an intelligent people surpasses a stupid one, and an exemplary people an immoral one, has infinitely more to do with the wellbeing of a nation than soil or climate, or even government itself, except so far as government may prove to be the patron of intelligence and virtue."

These sentences imply, that to impart mental light to its citizens is the imperative moral duty of a commonwealth—to make the people intelligent through education, its first material interest.

The facts which it is most interesting to know as to these schools, in so far as Massachusetts is concerned, are, that—

1°. In 1642, the general court of the colony of Massachusetts enjoined upon the municipal authorities the duty of seeing that *every child* within their jurisdictions was educated; but it imposed no penalty for disobedience.

2°. In 1647, a law was passed making it imperative upon every town of fifty householders to maintain a school, to teach *gratuitously* every child who came to them to read and write; and every town of a hundred householders, a grammar-school, in which boys could be fitted for the university. The penalty for non-compliance, which was at first £5, was at successive periods raised to £10, £20, £30, and upwards, according to the wealth and population of the towns.

3°. At present, Massachusetts is divided into 314 towns and cities, each of which, however small or poor, is bound to maintain one or more schools for six months in the year, to which all the children residing within their several limits shall have free admission. If there be a hundred householders, one school must be kept for twelve months, or two or more for periods which, added together, will make up twelve months. If 150 families, two schools for nine months; if 500 families, two schools for 12 months. And wherever there are 500 families, a higher school must be kept for the use of all, in which history, algebra, geometry—and, if the inhabitants are 4000 in number—Latin, Greek, rhetoric, and logic shall be taught.

4°. The number of free schools in the State, in the year 1848–9 was 3748, being one for every two square miles of improved land, or for every 240 inhabitants. The schools were kept on an average seven months and twenty-four days in the year. The average attendance was 126,000 in summer, and 143,000 in winter; and the number of teachers 8163 of whom 5737 were females.

5°. Each township is bound by law to raise by assessment, for the payment of instructors only, at least one dollar for each person between the ages of four and sixteen, or to forfeit all claim to their share of a school-fund now accumulating, and which will ultimately become large. But this amount is in reality greatly exceeded—some townships raising as much as ten, and none less than two dollars for each person between these ages. The average for the whole State, in 1848–9, was three dollars 87 cents, or about 16s. 9d. sterling.

The number of children between these ages is very nearly one-fourth of the whole population; so that in the State of Massachusetts every person is taxed about 4s.* a-year for the maintainance of free schools. This tax is much heavier than that of the State of New York, which has already a large school-fund, and where the tax amounts only to 10d. a-head. Such a tax of 4s. a-head, from the 20,000,000 of Great Britain, would yield a revenue of £5,000,000 sterling; a tax of 10d. a-head, such as is levied in New York, would yield in Great Britain £833,000 a-year. In treating of the New York schools in a previous chapter, I have hazarded the opinion, that this sum exceeds all that is paid to all our schools from public funds, and that the State of New York might well give a lesson to us. But how much more of a national concern still do the people of Massachusetts consider education, when they levy for their schools a public tax, which in Great Britain would yield £5,000,000 sterling? It must be borne in mind, however, that it is only the national duty and national advantage that are here in question. It is possible that a larger amount than this may be spent upon individual education in Great Britain, paid directly by those who receive and are immediately benefited by it. But if such a sum

* It is as near as possible a dollar a-head; the sum raised in 1848–9 being 866,000 dollars, from a population of about the same number.

be really so spent, it is not expended in such a way as to place the advantages of education within the reach of all, and to benefit the State, through the elevation of the moral condition and intellectual position of all. I do not add that it is not spent in such a way as to exonerate the State of its duty to impart light to all, because many are, with us, still unwilling to admit—as Mr Horace Mann and his countrymen in Massachusetts do—either that every man has a natural right to education at the hands of the State, or that it is an imperative duty upon the State to place it within his reach.

Notwithstanding this large provision of public instruction in common schools and free academies, there are many private schools in the larger towns of Massachusetts. Divisions in society have sprung up there, as among ourselves, and many persons prefer to pay large additional sums for private instruction, rather than allow their children to incur the risk of acquiring improper habits, or forming undesirable acquaintances, at a free academy. In a town like Boston, the free schools and academies are admirably adapted to cultivate both the minds and the manners of the children and grandchildren of the Irish and other poor immigrants who yearly crowd into its harbour and streets. But intercourse with these Irish descendants has the opposite effect upon the families of the more respectable classes, and these are in a great degree compelled, in self-defence, and at an expense which some parents have complained to me as excessive, to place *their children* in private schools. The sums actually paid for private tuition in this way amount to about one-fourth of all that is levied by tax for the support of the free schools of the State.

An attempt is about to be made in this State to set aside a portion of the free-school fund to pay the salaries of professors at the universities and colleges—that collegiate like school instruction may thus be offered freely

to all comers. College expenses in this State average from 150 to 200 dollars a-year, of which about 50 dollars are paid in fees. If these fees were paid out of a public tax, the expense of university education would be diminished from one-fourth to one-third. But the result of this reduction would not necessarily be to increase the number of students. Dr Wayland has rendered it exceedingly probable—I may say, has almost demonstrated—that the cause of the falling off in the number of students in the New England universities is not the expense incurred, but the inadequacy, *in kind*, of the instruction given in these institutions to meet the more pressing wants of a people advancing rapidly in all the arts of life.

Without desiring in any way to lessen the merits of the Massachusetts school-system, and of the people of the State in adopting and supporting it, there is one historical fact which ought to be borne in mind in treating of the alleged originality of those who were the first to introduce it. I have already adverted to the tendency to hero-worship in the New Englanders, in reference to the pilgrim fathers; and to their habit of investing these men with perfections, moral and intellectual, beyond their contemporaries, to which they have in reality no claim. Unfamiliar with the social condition of Europe in the times of the Reformation, New England writers assume, that whatever superiority in mental freedom and foresight the first emigrants to North America exhibited beyond the people at home *as a whole*, was their own especial possession, and marked their individual superiority to those whom they left behind. But they only brought with them, in reality, a few of the ideas which for nearly a century had been fermenting in the leading minds of reforming Europe; that is, ever since the first voices had begun to be raised against Papal oppression.

As to the general education of the whole people, for example, all the leading Reformers were satisfied that it

was the only way by which Popery could be permanently excluded from the countries in which Protestantism had succeeded in securing an ascendency; and they laboured, therefore, wherever they possessed sufficient influence, to have means publicly provided for securing such general education.

In 1560, for example, when the Reformation was established in Scotland, the compilers of the *First Book of Discipline* "required that a school should be established in every parish, for the instruction of youth in the principles of religion, grammar, and the Latin tongue." This point they actually gained; and, by a permanent endowment, insured a competent salary to the schoolmaster, and the continuance of the schools to the present time. The influence of these schools upon the character of the Scottish peasantry is sufficiently known.

"They proposed also that a college should be erected in each 'notable town,' in which logic and rhetoric should be taught along with the learned languages. They seem to have had it in their eye to revive the system adopted in some of the ancient republics, in which the youth were considered as the property of the public rather than of their parents, by obliging the nobility and gentry to educate their own children, and by providing at the public expense for the education of the children of the poor." The blame of not carrying this *whole* scheme into effect is to be ascribed "not to the Reformed ministers, but to the nobility and gentry, whose avarice defeated the execution of their plans." *

Here, then, in Scotland, eighty years before the first act of the Council of Massachusetts in 1642, a system of parish schools was established, sufficient for the wants of the population of the time, but which contained within itself no provision by which the holders of property in a parish could be compelled to enlarge the provision as the

* M'Crie's *Life of Knox*. 4th edition, (1818,) vol. ii. p. 10.

population increased. The founders of these schools also left upon record their opinion that *the children were the property of the State*, and that, to complete these plans, education should be provided for the masses free—their view being, that this was the only certain way of permanently securing the blessings of the Reformation.

There is no reason to believe that these enlightened views were peculiar to the Scottish Reformers, and not common to them with the leading German and Swiss religionists, and with the Puritans of England. From Europe they were carried across the Atlantic by those who at a later period migrated for conscience' sake to the shores of New England. There no avaricious nobles or large landed proprietors, less concerned for the general welfare, prevented the scheme from being fully carried out. All were alike poor, and a permanent law was without opposition enacted, containing within itself a principle of expansion which enabled it to adjust the supply of instruction to the wants of an increasing people. And thus in 1642—seventy-five years after the death of Knox (1572)—the plan he would fain have perfected in his own was fairly established in a far distant country. It is thus to circumstance and opportunity, more than to exclusive intelligence and liberality in the early settlers, that New England owes the great blessings of its educational system. It will be for the general good of mankind that their own energy, watchfulness, and love of true learning, should secure it unimpaired to the latest period. It will be for the special benefit of us at home if the re-echo of our own thunder, returning after a lapse of two centuries, shall lead us at last to perfect the idea of our forefathers on their native soil.*

March 26.—Before leaving North America, I wished

* The educational movements now in progress in Manchester and in Scotland are doubtless promoted by the proceedings of our American brethren.

to visit the locality on the Connecticut River where the well-known birds' tracks—foot-prints of birds—have been found, and to have an opportunity of sailing down the Hudson River from Albany to New York.

In company with Professor Henry Rogers, I therefore left Boston this morning on a visit to President Hitchcock, of Amherst College, to whom the world is indebted for a knowledge of these remarkable foot-prints; and who, when they were first discovered, had the moral courage to pronounce them to be—what then appeared in the highest degree unlikely and absurd—impressions produced by the feet of ancient birds walking over a thin, muddy, and impressible surface.

A few hours brought us to the town of Springfield, whence four railways take their departure—to Boston, Albany, New York, and towards Lake Champlain and Canada, by the head-waters of the Connecticut River.

While waiting for the train at Springfield, we visited the United States arsenal, which has been established on a rising ground in the suburbs of the town. The main building or store was still incomplete. It consisted of three floors, each of which was large enough to contain 100,000 stand of arms. The workshops were especially interesting. Among the more ingenious pieces of machinery were those for turning the stocks of muskets, and for boring out the hollow in which the lock is inserted. This machine will probably appear among the other American articles in the Exhibition of 1851. If so, I particularly commend it to the attention of my English readers. Springfield, from its position as the place of meeting of so many railways, is remarkably well chosen as the site of a national arsenal. Weapons for 300,000 men can, upon the first telegraphic signal, be despatched either up the Connecticut towards Lower Canada, through Albany towards the Lakes, or to the Atlantic shores northward by Boston, or southward by New York.

The Connecticut Valley railroad carried us on our way to Amherst from Springfield to Northampton, a distance of seventeen miles, from which seven miles by stage brought us to Amherst. This ride must be very beautiful in summer. The country was barely free from snow as yet: the winter hue still gave a colour to all external objects, and the cold was severe. Still it was easy to see that the soil of the valley was in general too light and sandy for rich cultivation, though here and there spots occurred which were of a more capable character.

Amherst is beautifully situated on the upland, overlooking the whole valley of the Connecticut. I have seldom seen a public institution, the site and view from which I admired more than those of the College at Amherst. The situation of Brown University at New Providence, in Rhode Island, is very commanding, and over the town, and beyond the river, opens out a wide view before the eye of the stranger; but there is a charm in the deep valley of the Connecticut, and the ranges of trap hills rising on either hand, as seen from the Amherst University buildings, which made me regret that, instead of a summer sun gilding the green hill-sides and fields of golden corn, and inviting to a more detailed examination of the numerous striking points of the landscape, a chilling winter wind froze up external nature, and compelled me to seek shelter from its searching presence.

I spent a pleasant evening with President Hitchcock and his amiable family, and had the gratification of leisurely examining, in the College Museum, the long slabs of stone on which the largest footprints of the gigantic birds of the New Red Sandstone period are impressed. How remarkable it appears that a shower of rain, or the foot of a heedless bird, should impress upon dead matter memorials of themselves, which have lasted, it may be, for a million of years; while man, with all

his intellect, ambitiously strives after an earthly immortality, which, even in the most successful cases, a thousand years melt away into the dimness of traditionary fable!

Among the working naturalists attached to Amherst College, Professor Adams, a physiological conchologist of much minute and laborious research, is one of the most zealous. The shells of Jamaica have received much of his attention, and he has paid several visits to that island, for the purpose of enriching the cabinet of his college. In microscopic shells, he states the coast of Jamaica to be amazingly rich. In his monograph of a new microscopic species allied to *Turbo* and *Margarita*, to which he has given the name of *Vitrinella*, he states that most of his specimens were obtained from a single *pint* of sand taken from a sand-beach in a little cove near Port Royal, Jamaica, which pint of sand contained 110 species of shells! In such microscopic shells of new and undescribed species and genera, his collections are very rich.

The mineralogical collection of Professor Sheppard, who resides at Amherst part of the year, are also displayed in the museum of the college, and contains many choice specimens. Of the mineral specimens which attracted my attention most, as economically valuable, were nodules of phosphate of lime from the meiocene (tertiary) green sands of Martha's Vineyard—an island lying off the mainland of Massachusetts, to the south of Plymouth. The occurrence of such nodules in this geological position is very interesting, not only from the possibility that further search may discover them either there or elsewhere in the tertiary green sands of the Atlantic coast, in sufficient quantity to make them economically valuable, but because it seems to indicate an original connection between green sand and phosphate of lime, which is not altogether of an accidental kind. If nodules of this phosphate abound in the green sand formation below the chalk, and give

fertility to soils formed from it, and if similar nodules occur in similar green sands of the tertiary epoch, the origin of the green grains and the phosphate of lime would appear to be simultaneous. Any chemical cause that accounts for the formation of the characteristic green sand, ought also to account for the presence, amongst it, of those nodules of phosphate of lime. At least this point thrusts itself forward as deserving of investigation.

Amherst College was established in 1821. It is under the management of the Trinitarian Congregationalists; has eight professors, four tutors, and 176 students. It is a retired, quiet, and healthy place, and the students' expenses rarely exceed 150 dollars. At Yale, as I have elsewhere stated, the expenses are one half more; and at Cambridge, nearly twice as much.

March 27.—Returning to Northampton by stage, we ascended the Connecticut River by railway, twenty miles farther to Greenfield, in the neighbourhood of which lie the localities most fruitful in the fossil bird-tracks. This upper part of the river presents many beautiful points of view—river reaches, wooded banks, and overhanging hills and cliffs,—which, in summer, must make the journey by this line of railway very pleasant. But there is abundant wilderness also, and flats still dotted over with the unsightly blackened stumps of the lately burned forest, which carried me back again in memory to all I had seen in the rawer regions on the St John, the St Lawrence, and their many tributaries. Here, after the lapse of three centuries, the axe of the Saxon woodman is still only beginning to make itself felt on the less promising portions of the Connecticut valley—its swampy bottoms, and its gravelly slopes.

I have already, more than once, described the surface of Massachusetts as agriculturally poor—one great cause, no doubt, of its activity and progress in the other arts of life. Still, of the whole area of the State, which com-

prises four and a half millions of acres, less than a million are said to remain unimproved. The traveller possessed of an agricultural eye, who has crossed fifty miles of the State in any direction from Boston, would be surprised to learn that so large a proportion of such a soil had been improved by so small a population in the short space of two or three centuries. He would be able, however, to account for so much having been nominally done, when the same instructed eye had taught him how very different a meaning the word *improved* has in the mouth of a Massachusetts, from that which it conveys to the ears of a Lincolnshire or Aberdeenshire farmer.

Poor light sands and gravels form the staple soils of the Connecticut valley. Where tributaries join the main stream, or flats occur in which ancient lakes have stood, richer materials fall to the lot of the cultivator, and crops of abundant broom-corn and luxuriant maize—as in the valley of the Mohawk—reward his labours. But rudeness still prevails, and infantile husbandry almost everywhere — swamps undrained, thickets uncleared away, and wet land swarming with rushes. The age of rural improvement, in our home sense of the term, has scarcely yet opened among these remoter tillers even of New England soil.

Where the Deerfield river joins the Connecticut, rich and extensive flats occur, and very beautiful scenery. I could have wished for leisure and summer weather to have spent a couple of days in exploring this neighbourhood, its natural beauties, and the numerous terraces of varying width which rise in steps above the beds of both these rivers.

Greenfield is a small town, new, straggling, and unfinished, as all these country towns are. It is the county town, and the seat of the courts of the County of Franklin. One of the persons of whom we were in search, Mr Marsh, was in attendance as doorkeeper at

one of the courts then sitting. He is, besides, only a common mason and gardener, but he has, nevertheless, spent more time and money in searching for and digging up the bird-tracks of this region, and possesses a larger and finer collection of them, than any other person or institution in the United States. Whoever takes the trouble to ascend the valley to Amherst, to see the very interesting collection contained in the museum of that College, and brought together by the labours of President Hitchcock, will find himself not unrewarded for the additional journey to Greenfield by the inspection of the collection of Mr Marsh. This collection is less rich in slabs impressed by the consecutive footsteps of the most gigantic of the ancient birds—that which had a step of six feet, a length of leg of nine feet, and a height of eighteen feet. But it is richer than that of Amherst in more beautiful and perfect slabs of species of somewhat lesser size, and in many as yet unfigured impressions both of reptiles and of birds.

In looking at this collection made by a working man, dug up either with his own hands, or by men working along with him—at his expense, under his direction, and in spots which his own sagacity indicated as likely to reward research—I could not refrain from admiring the enthusiasm and perseverance of their owner, and regretting that, even in this intellectual State, science was too poor, not only to engage such a man wholly in its service, and to add to its treasures by employing him unremittingly in his favourite pursuit, but that it was unable even to purchase the fruits of his past labours, and add them to the public collections already accumulated in so many localities. Should American patrons of science, and the owners of University and State collections continue unwilling to purchase the large slabs of Mr Marsh, those of European countries—I hope of Great Britain—may secure the best he possesses for a

little more than a thousand dollars, or two hundred pounds. I must add, however, what all collectors will well understand, that Mr Marsh looks upon these slabs of stone as so many children, and that he professes—as I am sure he feels—a great unwillingness to part with them. But, like Dr Deane of Greenfield—whose name is connected with the first discovery of these tracks, and who has been obliged to discontinue collecting—Mr Marsh has living feet gathering now in plenty around his daily table; and his friends may prevail upon him to consent that, for their sake, these great stones should be converted into bread.

I owe Mr Marsh this acknowledgment for the civility he showed to Professor Henry Rogers and myself, not only in exhibiting his collections, but in accompanying us to Turner's Falls, and spending half a day in pointing out the localities in which his more successful explorations had been made. Turner's Falls are formed by an artificial dam, supported about the middle by two small islands, over which the waters of the Connecticut river fall from a height of thirty feet. With the adjoining, for the most part, wild, elevated, and wooded scenery, these artificial falls form the most striking object of the kind in New England. Immediately below the falls, the river rushes against an elevated ridge of trap, by which it is made to turn nearly at right angles to its former course. Against this trap ridge the edges of the new red-sandstone strata abut at a high angle,—turned up, as President Hitchcock thinks, by the elevatory movements which forced the trap ridge through them—in the angle at which they were naturally deposited, according to the Professors Rogers.

However this be, the break caused by the eruption of the trap has exposed the edges of the lower beds of the red-sandstone formation below Turner's Falls. Many of these beds are dark-coloured; bear the impressions of

plants; and more resemble some of the thin shale beds of our coal measures, as they would be altered by the near contact of trap, than any of the beds which the upper new red sandstone exhibits in England. The lower new red, in the county of Durham, in its fish bed and in some other parts of its thickness, exhibits dark-coloured shales, which, when altered by heat, might assume the dark and micaceous aspect of the beds near Turner's Falls. It is among these beds, inclined at an angle sometimes as high as 80°, that the bird-tracks and the footprints of small reptiles occur; and in this and a few other places along the river, where the same beds have been observed, Mr Marsh has obtained his most valuable specimens. Among the fragments thrown aside along the foot of the bank, we found many fragments of footprints of all sizes, and, in the living rock, saw others remaining still untouched.

Returning by Greenfield from the falls, we descended by railway to Springfield, and found excellent accommodation at an hotel much frequented by travellers in summer, which is known by the name of the Mansion-house.

March 28.—I parted this morning from Professor Rogers, who returned to Boston, while I took the train to Albany. The river Hudson was now open from that city to New York, and I wished to see something of its boasted beauties before I embarked for Europe.

The Westfield river, coming from the north-west, through the Green Mountains, falls into the Connecticut below the town of Springfield. Up the almost continuous gorge through which this river flows, the railway ascends from Springfield towards Albany. The line displays many engineering difficulties overcome, and much very costly excavation, but it presents also scenery at once striking, varied, and agreeably picturesque. After a few miles of new red-sandstone rocks, granite, mica-

slate, and lastly gneiss, are the prevailing rocks, till Washington is reached, and Hinsdall on the summit level. Thence the descent towards the Hudson commences over the frequently-folded edges of mixed lower silurian limestones and slates, more or less metamorphic. In this border county of Berks, just beyond the summit level, lies the richest agricultural district of Massachusetts. The township of Pittsfield, situated in a beautiful valley, and that of Richmond, form the centre of this district, which is the more interesting to the scientific agriculturist from the circumstance that its geological character at once enables us to predict what in favourable circumstances its agricultural character should be.

The Potsdam sandstone, until recently considered the lowest of the fossiliferous beds of the United States, is altered in this county, (Berks,) and, indeed, in nearly its whole course south towards the Atlantic, in various degrees, and in a way that is very instructive. In the majority of places it is a hard indurated quartz rock, and is therefore distinguished by the name of *the quartz rock* by President Hitchcock. In other places it is a very hard and durable sandstone,—is especially famous as a firestone,—and is transported for the erection of furnaces even as far as Maine. In other places, again, the escarpments of the rock are only loose and crumbly quartz sand, of a dazzling whiteness, and often of exceeding fineness. In these localities it can be dug out from its native bed with the spade and mattock, and possesses the singular property, even when it is excavated in harder lumps, of falling to a fine powder when thrown into water. It has been found by trial to be superior in this powdery state to our English Lynn sand for the manufacture of a colourless glass, and is now dug out, reduced to powder, washed by being thrown into a current of water, and transported to Boston and elsewhere for the use of the glass works. It is delivered at Boston at the price of five dollars a ton.

It is probable that this sandstone contains some alkaline matter, which the water dissolves out of those varieties which disintegrate so readily, which gives to the harder varieties the property of withstanding the fire, and has been instrumental in aiding the conversion of the more changed parts into close and compact quartz.

Over this Potsdam sandstone lies the Black River limestone of the New York geologists—the lower Appalachian of the valleys of southern Pennsylvania and Virginia, where it is 4000 feet thick. In this border county of Massachusetts this limestone has a less thickness, but, like the sandstone, it is altered, and in many places is changed into a pure white marble. It is generally rich in magnesia. The same rock is observed to be so also in the Appalachian valleys. Here it is interstratified with beds of mica and other altered slates. These hard rocks crumble less readily, and form opener soils, than where the same rocks occur in a softer and less altered condition. It is of the mixed fragments of these rocks, however, that the productive soils are composed, by which, as I have said, this county of Berks is distinguished. The geological map shows that these mixed limestone and altered clay rocks occur in this county; and hence we should infer a greater natural fertility than the rest of the State possesses. The comparatively great height of the Berkshire valleys, and the altered character of the rocks, diminish the productive character of the soils which in other localities they produce. Here again, therefore, as in so many other places, we are taught that, in addition to what the mere inspection of a geological map conveys to us, the physical character of the rocks themselves, and the altitude of a place above the level of the sea, are among the circumstances we require to learn before we can venture to draw conclusions, or to pronounce opinions as to what the agricultural character of a region really *is*.

It had begun to snow in the morning when I left Springfield, and, with slight intermissions, the flakes fell thick enough during the whole day to interrupt the view, and to confine it very much to the immediate neighbourhood through which we passed. From the State line where we left Massachusetts and entered New York, the surface was undulating, but, in general, appeared well suited for agricultural operations. Clay soils prevailed, formed from the crumbling slates, and demanding the hand of the improving drainer to bring out their natural capabilities. The numerous orchards we passed, however, showed that dry spots were not wanting, and opener soils on which trees could flourish.

Newhaven, March 30.—The river Hudson was open yesterday morning, but the weather was cold, and as few travel for pleasure at this season, the only boats which descended to New York from Albany were night-boats. The morning boats came down only as far as Poughkeepsie to join the railway, which is completed from that town to New York. After spending a day at Albany, therefore, I was obliged to descend the river, partly by water and partly by rail, as my only chance of seeing anything of its beauties. The whole distance, from Albany to New York, is 145 miles. For the first thirty miles the river runs for the most part between high banks of clay and other drift, with only rare rocky or striking points, or open peeps into the country. It rather reminds one, though on a larger scale, of sailing upon one of those Dutch or Belgian canals, along which, in former days, travellers moved in the *treckschuits*, hemmed in on either hand by elevated dykes, under pretence of *seeing* foreign countries. The approach to, and the retreat from, the Catskill Mountains, which begin to arrest the attention at this distance down the river, is very fine, and recals the ridge of the Taunus, seen as one descends the upper portion of the Rhine. Poughkeepsie is seventy

miles below Albany. There the railway commences, and runs along the river nearly all the way to New York, cutting off only those windings and rocky parts, and promontories—such as West Point—which constitute the chief beauties of the lower half of the river, and which the stranger particularly desires to see. On the whole, I was disappointed with the Hudson; but the hues of winter and a chilly air overspread everything, and I was obliged to descend by land where some of the finest spots as seen from the river occur, and, therefore, I was not in a condition to form an adequate idea of what its beauties in its summer garb really are. At the same time, I would recommend the traveller who wishes to give the river fair play, not to read before he visits it the very patriotic comparison of the Hudson with the Rhine, which Cooper has incorporated into the introductory chapter of his *Heidenmauer*. If he do, and has previously seen the Rhine, he will do injustice to the native beauties of the Hudson.

A curious physical fact in connection with the river Hudson is not unworthy of mention. During the last forty years the influence of the tide has been felt from time to time higher and higher up the river. At Albany this influence was not sensible forty years ago, but, according to Professor Hall, "it has been gradually advancing, till the difference of level between high and low water is now as much as two feet." The consequence of this is, that the navigation at some distance below Albany has been improved—places formerly too shallow being now covered with a sufficient depth of water. At the same time, the advance of the tide, by shifting the point of meeting between the downward stream and the upward tidal wave, at which point the river sediment naturally falls, has caused the formation of new banks of silt below Albany, from which new obstructions to the navigation have arisen.

gable rivers, though they are more usually attended or caused by a lowering of the level of the water in the upper parts of the rivers themselves. If the bottom through which a river flows be such that the rush of water is constantly scouring it out, so as to lower the natural level of the river-surface, then the same height of wave entering its mouth will ascend farther, or make its influence felt higher up. This may be the case with the Hudson. Or the mouth of the river may be widening, so that a larger body of sea flows in; and, being driven forward by the rising wave, is forced to rise higher as it ascends the confined channel, both elevating the high-water surface, and making the tide observable to a greater distance upwards. Or, lastly, the increase of obstructions at some point between Albany and the mouth of the river, having the effect of damming back the river and preventing the ebb tide from fully flowing away, would at once elevate the permanent level at which the upper part of the river stands—the level of high water and the distance upwards to which the tides are felt.

A remarkable illustration of the converse of this latter mode of action has been afforded by the river Wear between Sunderland and Durham. The improvement of the harbour at Sunderland, the clearing of the outfalls, and the dredging of the river for two miles above its mouth, had, in 1842, caused a permanent lowering or scouring out of the bed of the river of 5 feet 3 inches below the level of its bottom in 1737, at a distance of 11½ miles from its mouth, (New Bridge,) while the level of high water at the same place is permanently lowered 5 feet 7 inches. At Biddick, which is nine miles from the mouth of the river, "the level of low water at spring-tides in 1737 was nearly the same as that of high water at spring-tides in 1842." This very remarkable circum-

stance shows how very much the drainage and consequent agricultural condition of an alluvial tract may be improved, by clearing the outfalls of rivers that flow through it; and, at the same time, how comparatively small the naturally accumulating obstructions in a river bed may be, which will be sufficient in a large stream like the Hudson to produce the tidal alterations which have been observed at Albany.

To the geologist who interests himself with questions concerning the supposed alteration of the levels of land and sea, changes such as those I have described form matters of important study. How easy to solve the rising of the tide at Albany, by supposing the whole region to be gradually sinking! And yet how unnecessary any such extraordinary supposition.

I reached New York about 1 P.M., staid there a day, and came on to Newhaven this afternoon. The weather here is mild and fine: signs of spring are appearing on the fields and hill-sides, and the rows of elms, for which the town is famous, have been a full fortnight in flower.

Boston, April 2.—Among the circumstances by which the city of Boston is rendered agreeable to a stranger, and by which he is enabled to meet many pleasant people, are the numerous clubs, literary and scientific, which exist in the city. Meeting successively in the houses of the members, these re-unions make one or more evenings of the week pass agreeably, and inoculate the purely mercantile part of the community with that taste for literature and science, to which their well-known liberality—in endowing and promoting, by their pecuniary means, these departments of knowledge—is mainly to be ascribed. I attended several of these evening meetings during my stay in Boston—the last one, on the eve of my departure, at the house of Dr Warren.

I allude to them, in this place, for the purpose of

the States, and to which I had in Boston, at the
ings and elsewhere, drawn that of scientific men

In speaking of the rocks of Canada, north
Lawrence, I have described a metamorphic lime
which the mineral phosphate of lime occurs in son
in very considerable quantity, and I have sugge
probability that, by a careful search, localities
found in which it may be met with in sufficient
to admit of its being profitably dug up and exp
England.

I have also mentioned that this limeston
descending the river Ottawa from Bytown, cr
St Lawrence at the Thousand Islands, and is
the state of a white marble, but still rich in t
phosphate, among the so-called primitive
northern New York. During my stay in Al
Emmons, who was qualified perfectly to unders
importance of the inquiry, in its practical and eco
as well as its theoretical bearings, assured me
one or more localities in Essex County, where
man might excavate a ton a day of this mineral
my return to England he has re-examined these l
and found his expectations realised. I have, t
put in communication with him a large consume
substance in London, and I hope to hear bef
that the first shipment of it has arrived in the T

Among the scientific mineralogists of New
Mr Alger, of Boston, author of a well-known
mineralogy, occupies a distinguished place.
in business, he adorns his leisure with the pu
science; and, in company with Dr Jackson, of
have already spoken, has made many scientifi
sions, of which the results have been communi
the world.

Among other observations made by these gentlemen, was one that at Hurderville, in Morris County, New Jersey, the mineral phosphate of lime occurred in considerable quantity, and sometimes in crystals of large size. But the circumstance possessed comparatively little interest, inasmuch as crystals larger and finer were found abundantly in northern New York. But after I had explained to my friends in Boston the utility of this substance in agriculture, the economical value it already possessed in England, and had urged on behalf of scientific agriculture, in America as well as in England, the importance of searching for new localities where it might be obtained—the fact above stated assumed a new value. My friends revisited the locality of Hurderville, and, since my return home, have informed me that they have found in that single locality enough to supply the English market for some years to come. The first shipment of it has already been received and sold in Liverpool.

The unlearned reader may ask what use this substance is put to in England. It is found, when reduced to fine powder, and rendered soluble by means of sulphuric acid, to promote very much the growth of our turnip and other common crops. It is prepared and sold therefore in large quantities—thousands of tons every year—for this purpose; and, under the name of super-phosphate of lime, is in much demand among improving farmers in many parts of the country. But it is as yet met with only in few localities, and generally much less pure than that which is likely to come from the United States, and, I hope, from Canada. These new supplies, therefore, will cheapen the article—bring a better quality of this manure into the market at a lower price—will thus place more fertilising means within the reach of the farmer—will keep down the rising price of guano by the beneficial competition—will benefit practical agriculture, and

increase the produce of the country. To the United States the discovery will, in the mean time, afford a new article of export, new employment to a part of its people, and, I hope, a reasonable profit for their exertions to my friends who have sought out the several localities. As soon as American farmers shall have satisfied themselves that, when prepared by means of sulphuric acid, it is really useful to their crops, the mineral will render the same services to their agriculture also as to ours. It may revive the wheat-growing powers of New England, and enable western New York to compete more profitably in the wheat-market with the new States of the north-west.

I have little more to add to these "NOTES." I sailed from Boston by the regular Cunard steamer, on the 3d of April. We encountered cold, snowy, and obscure weather on our way to Halifax. Thence we had what was pronounced a rough passage—were entangled among ice-drift and icebergs for a few hours about the south tail of the Bank, where I saw quite as many of these visitors as I ever care to meet; but finally reached Liverpool, after a run of thirteen days. The evening of the same day which brought us into Liverpool saw me safe at home in Durham, being the very evening I had fixed for my arrival four weeks before, in my letters from Boston. Such certainty of calculation do we now owe, even in the uncertain weather of spring, to the conjoined triumphs of mechanism and steam!

THE END.